GEOGRAPHIC AREAS OF PARTICULAR CONCERN

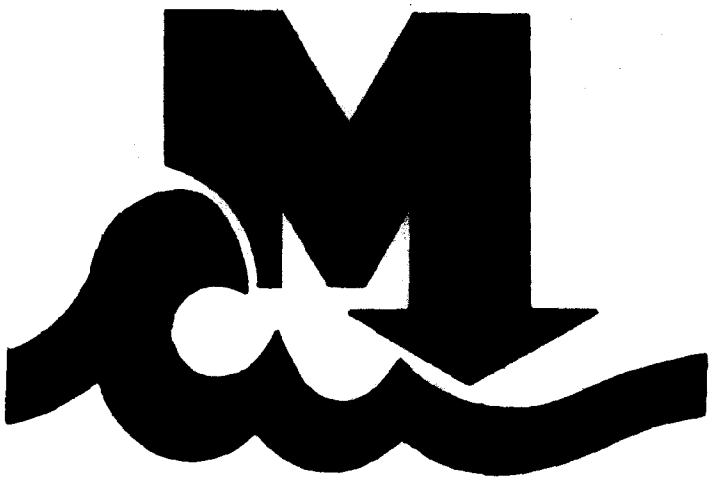
JACKSON COUNTY, MISSISSIPPI

FOR

MISSISSIPPI OUTER CONTINENTAL SHELF IMPACT STUDY

BY

JACKSON COUNTY PLANNING COMMISSION



MISSISSIPPI MARINE RESOURCES COUNCIL

GEOGRAPHIC AREAS OF PARTICULAR CONCERN

Jackson County, Mississippi

MISSISSIPPI OUTER CONTINENTAL SHELF

IMPACT STUDY

by

Jackson County Planning Commission
Emergency Operation Center
600 Convent Avenue
Pascagoula, Mississippi 39567

1976

Prepared For

MISSISSIPPI MARINE RESOURCES COUNCIL

Long Beach, Mississippi

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Introduction

Each geographic area of particular concern (GAPC) will experience differing types and degrees of impacts from onshore development and activity as a result of outer continental shelf resource development. This study breaks down these onshore impacts into four major types:

(1) Type 1 - staging activities, fabrication of platforms, harbor expansion, new storage yards, crew bases, pipelines and land falls, tank farms, refineries, petroleum complexes, ect.;

(2) Type 2 - associated infrastructure development such as increased need for housing, transportation networks, increased public services such as schools, police and fire protection, public utilities, and waste disposal, ect.;

(3) Type 3 - sociological impacts; and

(4) Type 4 - environmental impacts.

Environmental impacts will vary greatly from area to area, however, depending on the onshore impact type, the degree of onshore impact, the location of onshore impacts, and the proximity of one GAPC to another. Consequently, this study further subdivides environmental impact into three degrees of severity:

(1) Degree a - negligible; impacts so minor that they cannot be measured with any degree of accuracy:

(2) Degree b - measurable impacts; some air and water pollution, minor increases in solid waste and sewerage, some loss of open space, and minor reductions of aesthetic values as a result of onshore impacts; and

(3) Degree c - considerable impacts; air and water pollution, major increases in solid waste and sewerage, loss of open space, and reduction of aesthetic values as a result of onshore impacts.

Since each GAPC may experience a different degree of onshore impact, the impact types must be divided into degrees. For example, Bayou Casotte Industrial Park may experience type 1, type 2, and 4-c onshore impacts. The Mississippi Power Company Industrial Park may experience type 1 or type 2, and type 4-b impacts also. However, the degree of these impact types will probably be much greater at Bayou Casotte than at the Mississippi Power Company Industrial Park.

This study assigns three degrees of onshore impacts for each GAPC:

(1) Degree 1 - negligible; impacts so minor that they cannot be accurately measured;

(2) Degree 2 - measurable impacts; the impact types listed for each GAPC will have a measurable degree of impact; and

(3) Degree 3 - considerable impacts; the impact types listed for each GAPC will have a considerable degree of impact.

FIGURE 1: OCS ONSHORE IMPACT TYPES

Type 1: Staging activities, fabrication of platforms, harbor expansion, new storage yards, crew bases, pipelines and land falls, tank farms, refineries, petrochemical complexes, etc.

Type 2: Associated infrastructure development such as increased need for housing, transportation networks, increased public services such as schools, police and fire protection, public utilities, and waste disposal, ect.

Type 3: Sociological impacts.

Type 4: Environmental impacts and degree of impact:

a. Negligible;

b. Measurable; and

c. Considerable.

FIGURE 2: OCS ONSHORE IMPACT DEGREE

Degree 1: Negligible

Degree 2: Measurable

Degree 3: Considerable

MISSISSIPPI OUTER CONTINENTAL SHELF

IMPACT STUDY

GEOGRAPHIC AREAS OF PARTICULAR CONCERN

Jackson County, Mississippi

A. *RESIDENTIAL-COMMERCIAL DEVELOPMENTS*

1. ST. ANDREWS (See Township Map T8S-R7W).

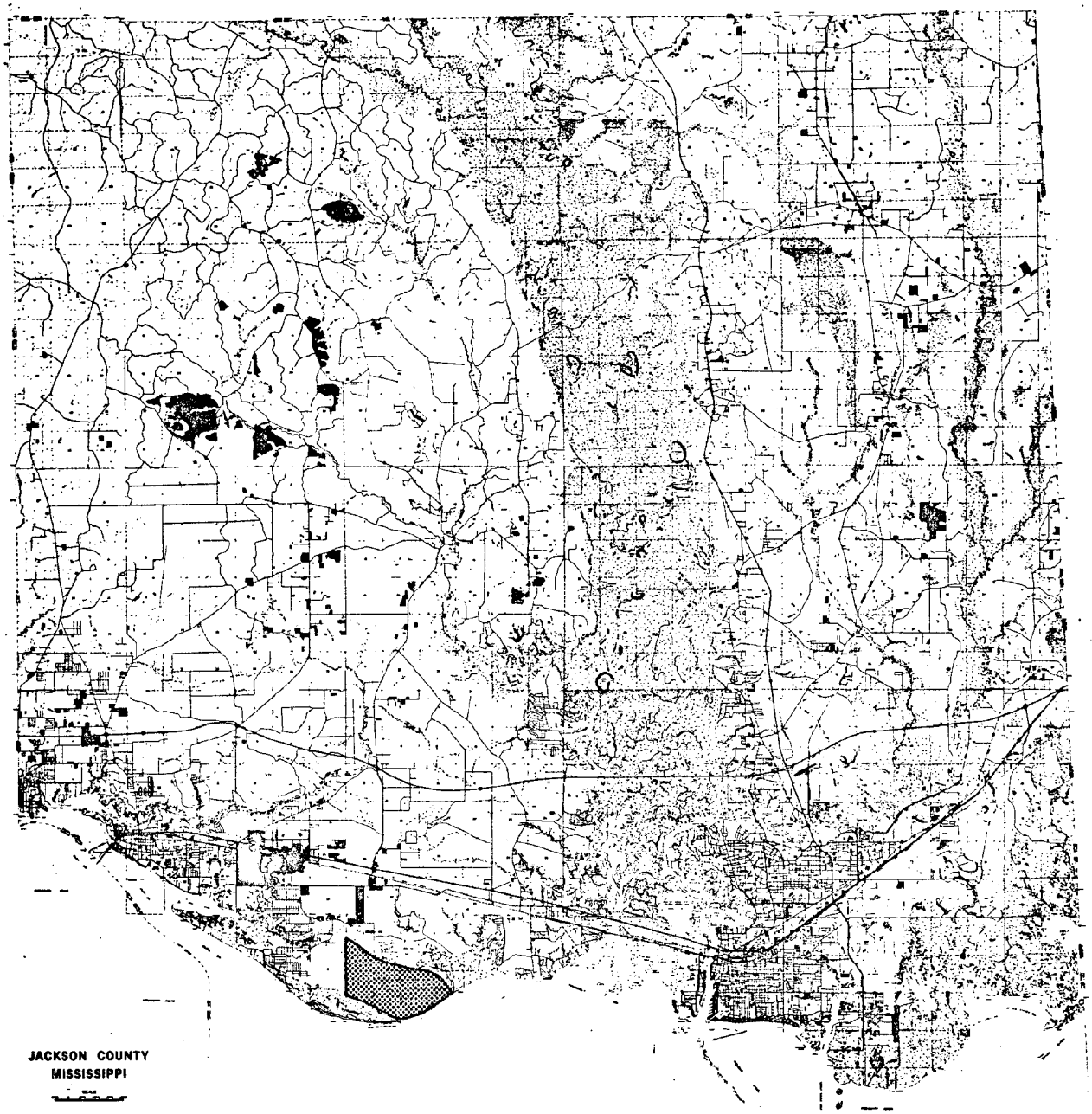
Geographic Delineation: South of Graveline Bay and Tidal Marsh and north of Belle Fontaine Beach, covering all or part of sections 6, 7, 17, 18, and 19. Ownership is private.

Physical Characteristics: GAPC 1 is physiographically classified as part of the Coastal Pine Meadows. Topography is generally level or near-level with maximum slopes of 8% near Graveline Bayou. Soils are sandy or loamy sands of the Eustis-Klej-Lakeland association and are alluvial in origin. The Citronelle dominates subsurface geology. Swamps and marshes fill most low areas and are tidal-influenced. Surface waters are brackish and salt-water encroachment is a danger in shallow aquifers. The average elevation is around 10'. There is danger of flooding during severe weather.

Biological Characteristics: GAPC A-1 is botanically classified as a southern mixed forest. Pines are the dominant vegetation with some hard-wood vegetation near and along Graveline Bay and Bayou. Wildlife is lacking in both diversity and abundance with seagulls being the most obvious form of wildlife.

Impact Type: 2, 3, and 4-b.

Impact Degree: 2.



ST. ANDREWS

LOCATION MAP

2. GAUTIER (See Township Maps T7S-R6W, T7S-R7W, T8S-R7W, and T8S-R6W).

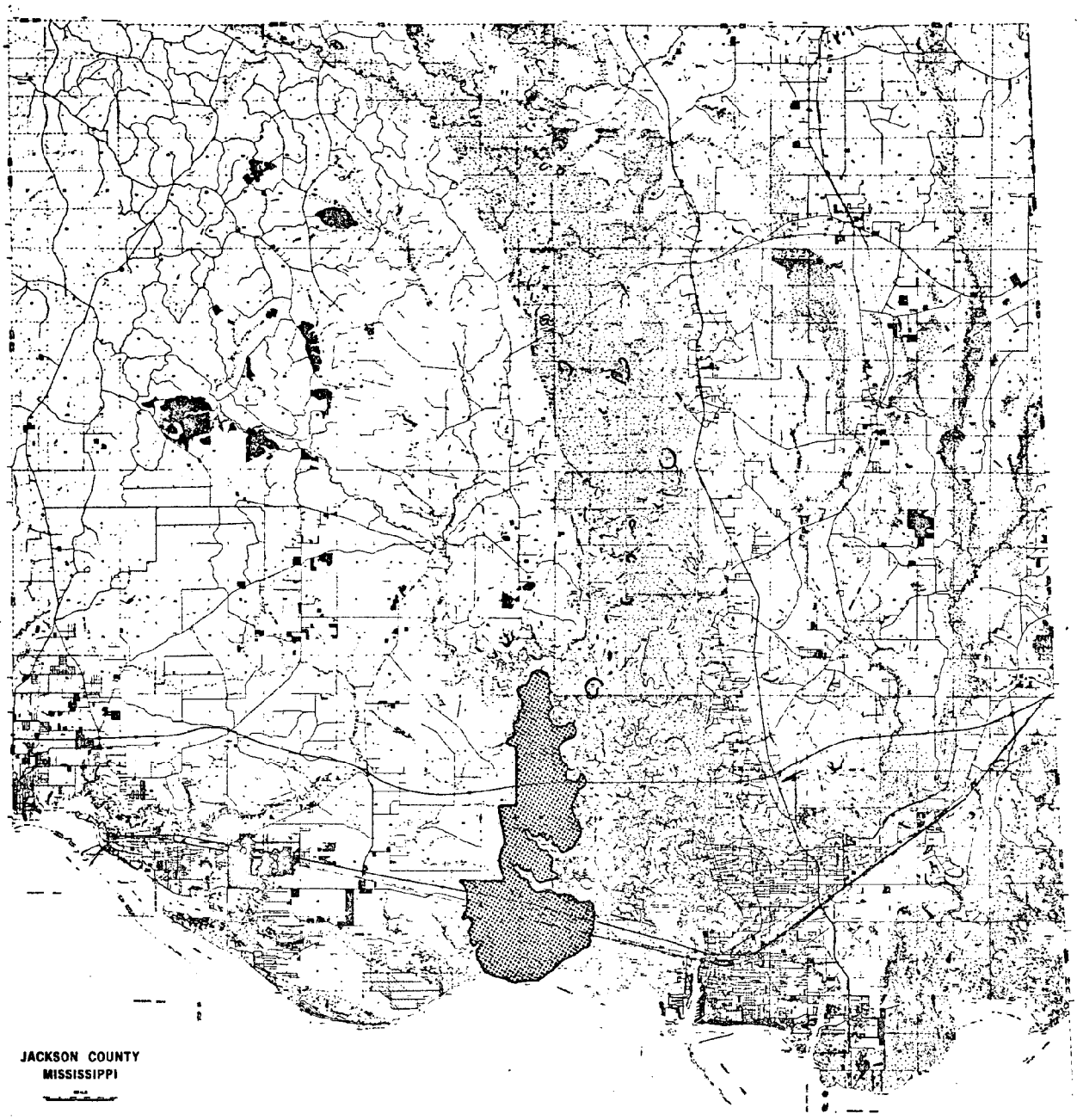
Geographic Delineation: West of the West Pascagoula River, east of Graveline Marsh, north of the Mississippi Sound, and south of Bluff Creek Marsh, covering all or part of sections 7, 18, 30, 31, and 32 in T7S-R6W; sections 1, 11, 12, 13, 23, 24, 25, 26, 34, 35, and 36 in T7S-R7W; sections 1, 2, 12, 13, 14, and 15 in T8S-R7W; and sections 2, 3, 4, and 9 in T8S-R6W. Ownership is private.

Physical Characteristics: GAPC A-2 is physiographically classified as part of the Coastal Pine Meadows. Topography is generally level to near-level with maximum slopes of 12%. Elevation averages 15' in the southern portion to 25' in the northern portion. Soils are sandy, loamy sands, or organic loams of the Rains-Lynchburg-Plummer-Goldsboro association in the southern portion and sandy soils of the Eustis-Klej-Lakeland association in the northern portion. Soils are alluvial in origin. The Citronelle dominates subsurface geology. Swamps and marshes fill most low areas and are tidal-influenced. Surface waters are mostly brackish in the south and fresh in the north. Salt-water encroachment is a danger in shallow aquifers south of Mary Walker Bayou.

Biological Characteristics: GAPC A-2 is botanically classified as a southern mixed forest. Pines are dominant inland while oaks, magnolias, and cypress are predominant near and on Mary Walker Bayou, West Pascagoula River, Bluff Creek and the Mississippi Sound. Wildlife is lacking in both diversity and abundance inland, but becomes more abundant near water courses.

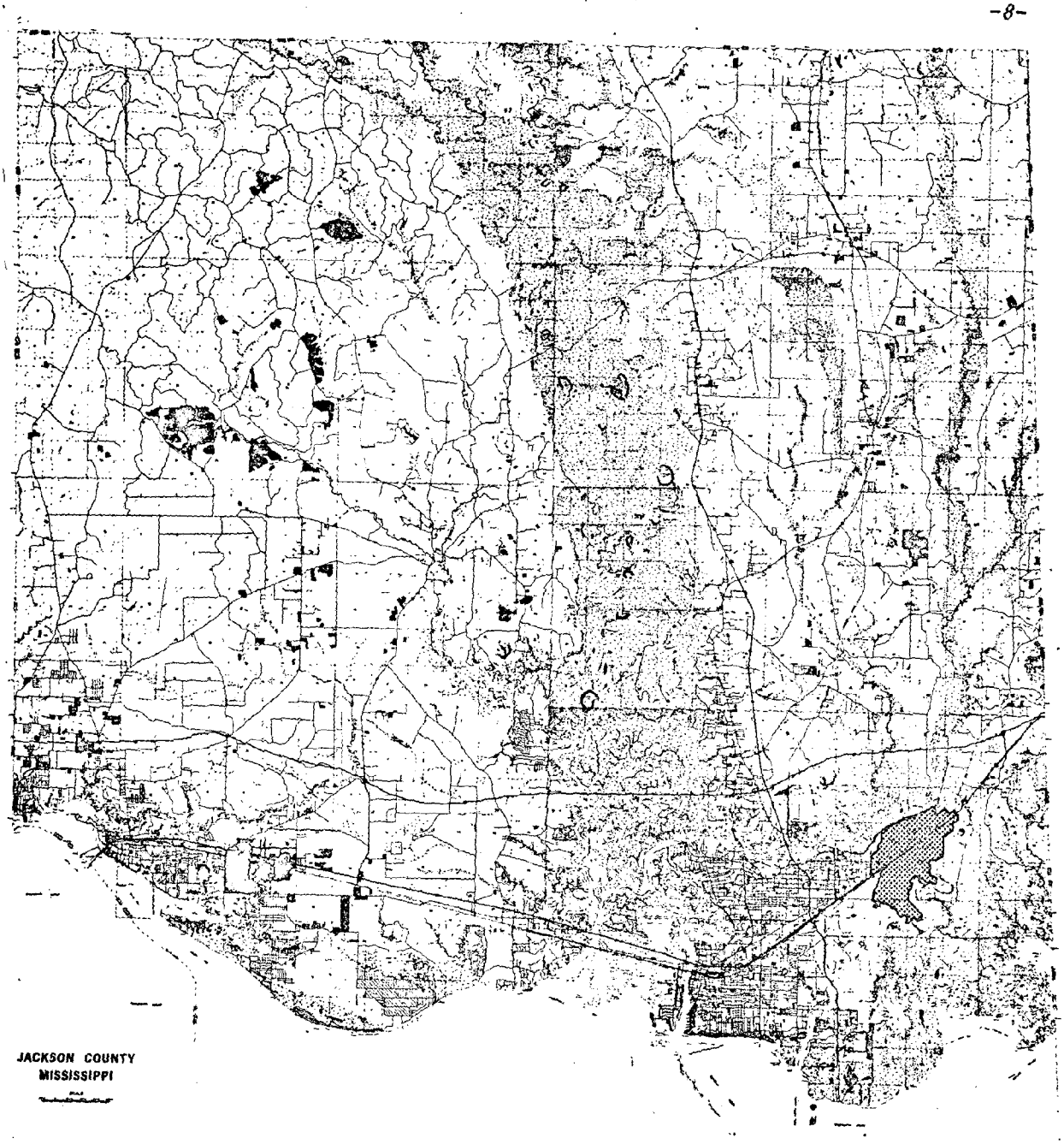
Impact Type: 2, 3, and 4-b.

Impact Degree: 2.



GAUTIER

LOCATION MAP



ORANGE GROVE

LOCATION MAP

3. ORANGE GROVE (See Township Map T7S-R5W).

Geographic Delineation: East of Moss Point and Bayou Casotte Industrial Park, south of the Escatawpa River Marsh, and north of Bangs-Cumbest-Heron Tidal Marsh, covering all or part of sections 13, 14, 15, 22, 23, 26, 27, 34, and 35 in T7S-R5W. Ownership is private.

Physical Characteristics: GAPC A-3 is physiographically classified as part of the Coastal Pine Meadows. Topography is level or near-level. Average elevation is 6'. Soils are poorly drained loamy soils of the Rains-Lynchburg-Plummer-Goldsboro association. Soils are alluvial in origin. The Citronelle dominates subsurface geology. Swamps and marshes fill low areas and are tidal-influenced. Surface waters are mostly fresh. Salt-water encroachment is a problem in shallow aquifers. Land subsidence, frequent flooding, and a water table at or near the surface are major problems facing urbanization of GAPC A-3.

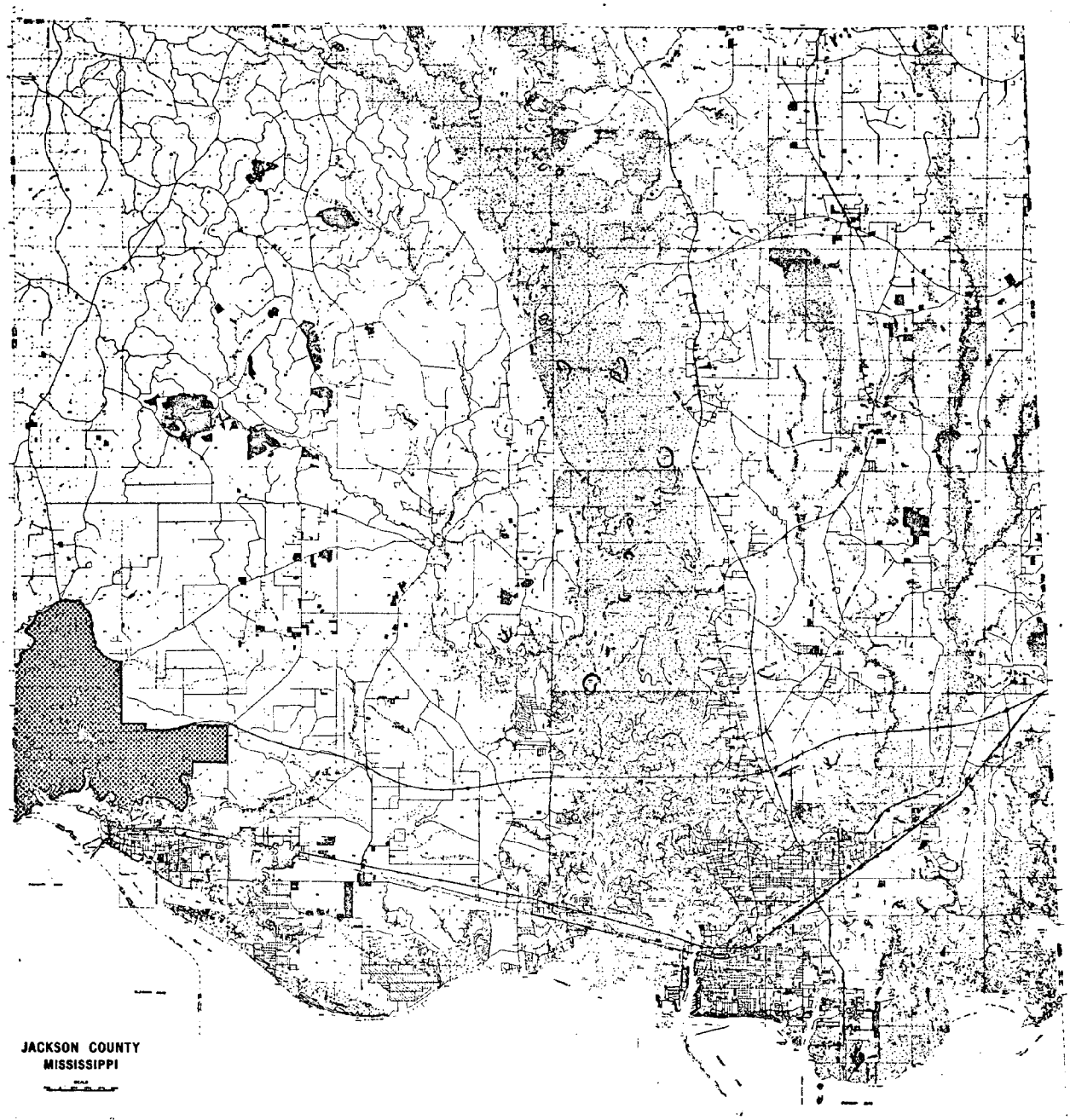
Biological Characteristics: GAPC A-3 is botanically classified as a southern mixed forest. Pines are the predominant vegetation. Wildlife is diverse and abundant, especially in or near swamps and marshes.

Impact Type: 2, 3, and 4-c.

Impact Degree: 3.

4. ST. MARTIN (See Township Maps T6S-R9W and T7s-R8W).

Geographic Delineation: East of the Harrison County line, north of Biloxi Bay and Old Fort Bayou, south of Bayou Costapia, and west



ST. MARTIN

LOCATION MAP

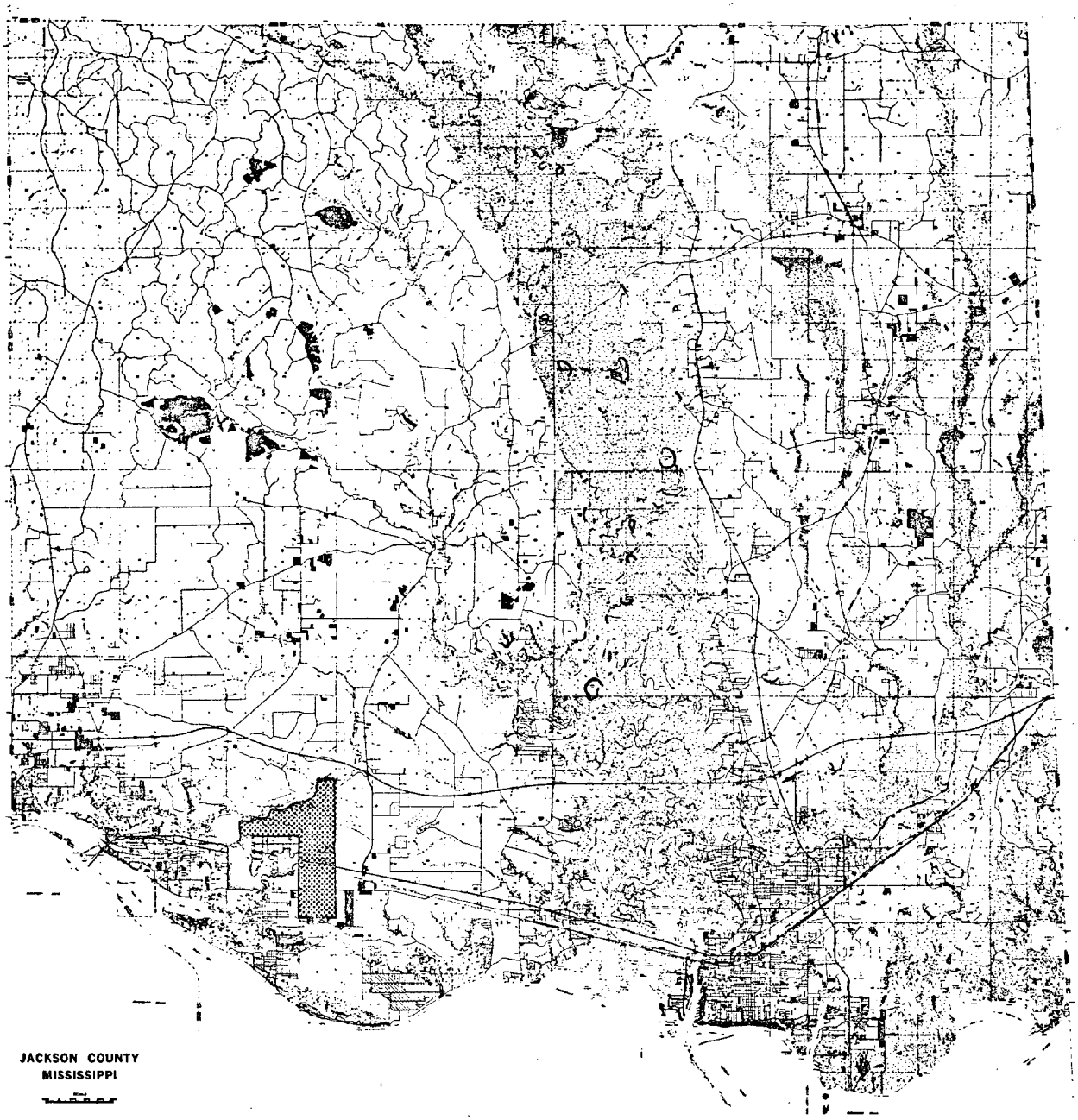
of the Sandhill Crane Preserve-Ocean Springs Unit, covering all or part of sections 25, 26, 27, 34, 35, and 36 in T6S-R9W; sections 7, 8, 9, 17, 18, 19, and 20 in T7S-R8W; and sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 24, 25, and 26 in T7S-R9W. Ownership is private.

Physical Characteristics: GAPC A-4 is physiographically classified as part of the Coastal Pine Meadows. Topography is gently rolling with maximum slopes of 18%. Average elevation varies from 15' south of I-10 to 40' north of I-10. Soils consist of poorly-drained loamy soils of the Rains-Lynchburg-Plummer-Goldsboro association in the southern and western section of GAPC A-4, sandy soils of the Eustis-Klej-Lakeland association in the eastern sections, and loamy soils of the Goldsboro-Lynchburg-Norfolk association in the northern section. Soils are alluvial in origin. Subsurface geology is dominated by the Citronelle south of I-10 and the Graham Ferry formation north of I-10. Low areas south of I-10 are filled with swamps and marshes and are tidal-influenced. Salt-water encroachment is a danger in shallow aquifers south of I-10.

Biological Characteristics: GAPC A-4 is botanically classified as a southern mixed forest. Live oak, cypress, and magnolia dominate the bay front and bayous while pines dominate inland areas. Wildlife is diverse and abundant.

Impact Type: 2, 3, and 4-a.

Impact Degree: 1.



OCEAN SPRINGS (OUTSIDE CITY LIMITS)

LOCATION MAP

5. *OCEAN SPRINGS (outside incorporated area) (See Township Map T7S-R8W).*

Geographic Delineation: South of Old Fort Bayou, west of Fontainbleau, and east of Ocean Springs and Gulf Park, covering all or part of sections 13, 14, 22, 23, 24, 25, and 36 in T7S-R8W. Ownership is private.

Physical Characteristics: GAPC A-5 is physiographically classified as part of the Coastal Pine Meadows. Topography is level or near level. Elevation averages 20'. Soils are poorly drained loamy soils of the Rains-Lynchburg-Plummer-Goldsboro association. Soils are alluvial in origin. Subsurface geology is dominated by the Citronelle. Low areas are filled with swamps and marshes which are tidal-influenced. Surface waters are brackish and salt-water encroachment is a danger in shallow aquifers.

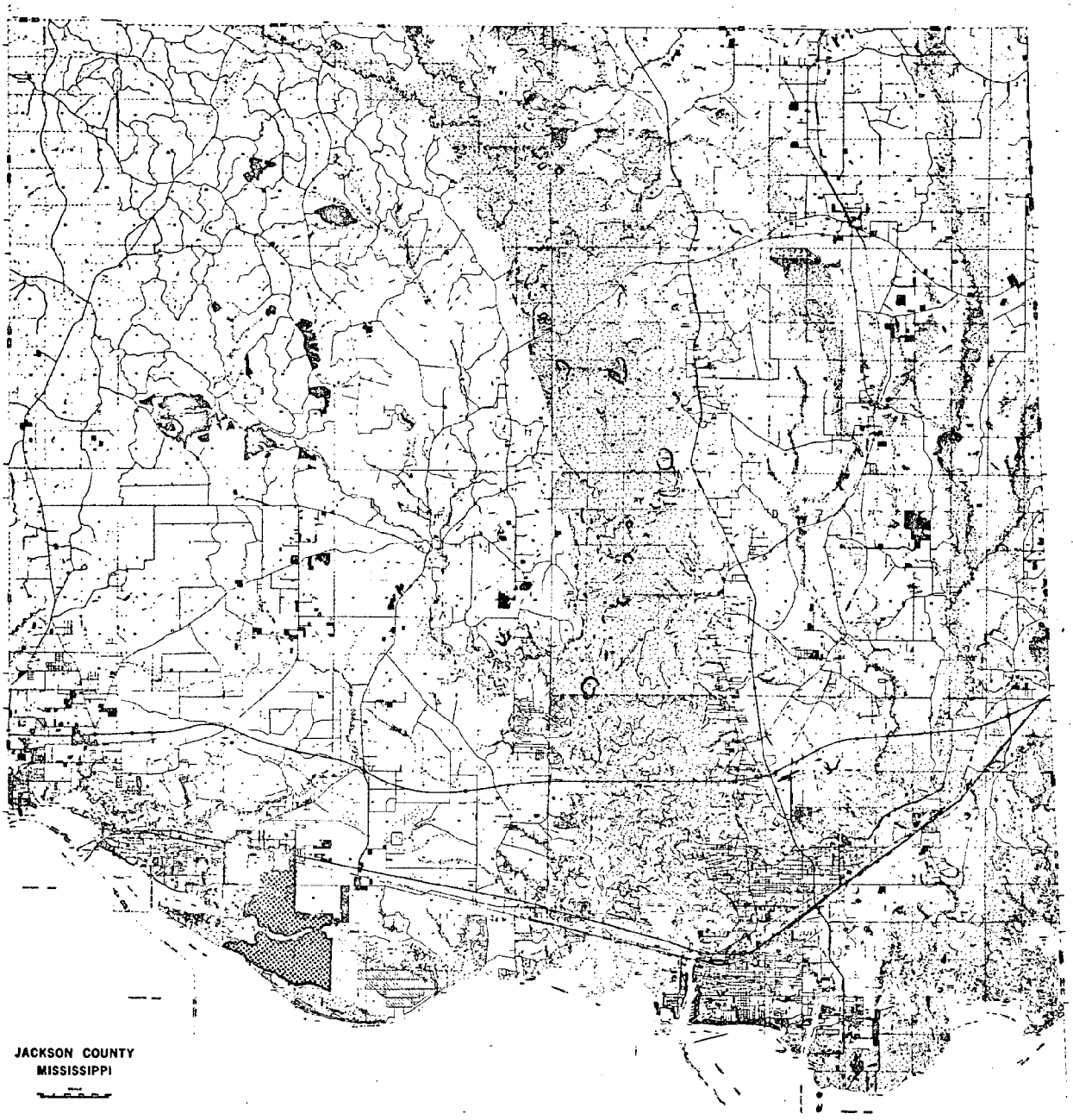
Biological Characteristics: GAPC A-5 is botanically classified as a southern mixed forest. Inland areas are dominated by pines while live oaks and magnolias dominate the area near Old Fort Bayou. Wildlife is generally lacking in diversity and abundance.

Impact Type: 2, 3, and 4-a.

Imapct Degree: 1.

6. *GULF PARK (See Township Maps T7S-R8W and T8S-R8W).*

Geographic Delineation: South of Ocean Springs, north of Belle Fontain Marsh and Biloxi Bay, east of Davis Bayou and Marsh, and west of St. Andrews covering all or part of sections 34 and 35 in T7S-R8W and sections 1, 2, 3, 10, 11, and 12 in T8S-R8W. Ownership is private.



GULF PARK

LOCATION MAP

Physical Characteristics: *GAPC A-6 is physiographically classified as part of the Coastal Pine Meadows. Topography is generally level with maximum slopes of 12%. Average elevation is 12'. Soils are sandy soils of the Eustis-Klej-Lakeland association south of Davis Bayou Marsh and poorly-drained loamy soils of the Rains-Lynchburg-Plummer-Goldsboro association north of Davis Bayou Marsh. Soils are alluvial in origin. The Citronelle dominates subsurface geology. Tidal marshes divide GAPC A-6 in half and marshes fill most low areas. Surface waters are brackish. Salt-water encroachment is a danger in shallow aquifers.*

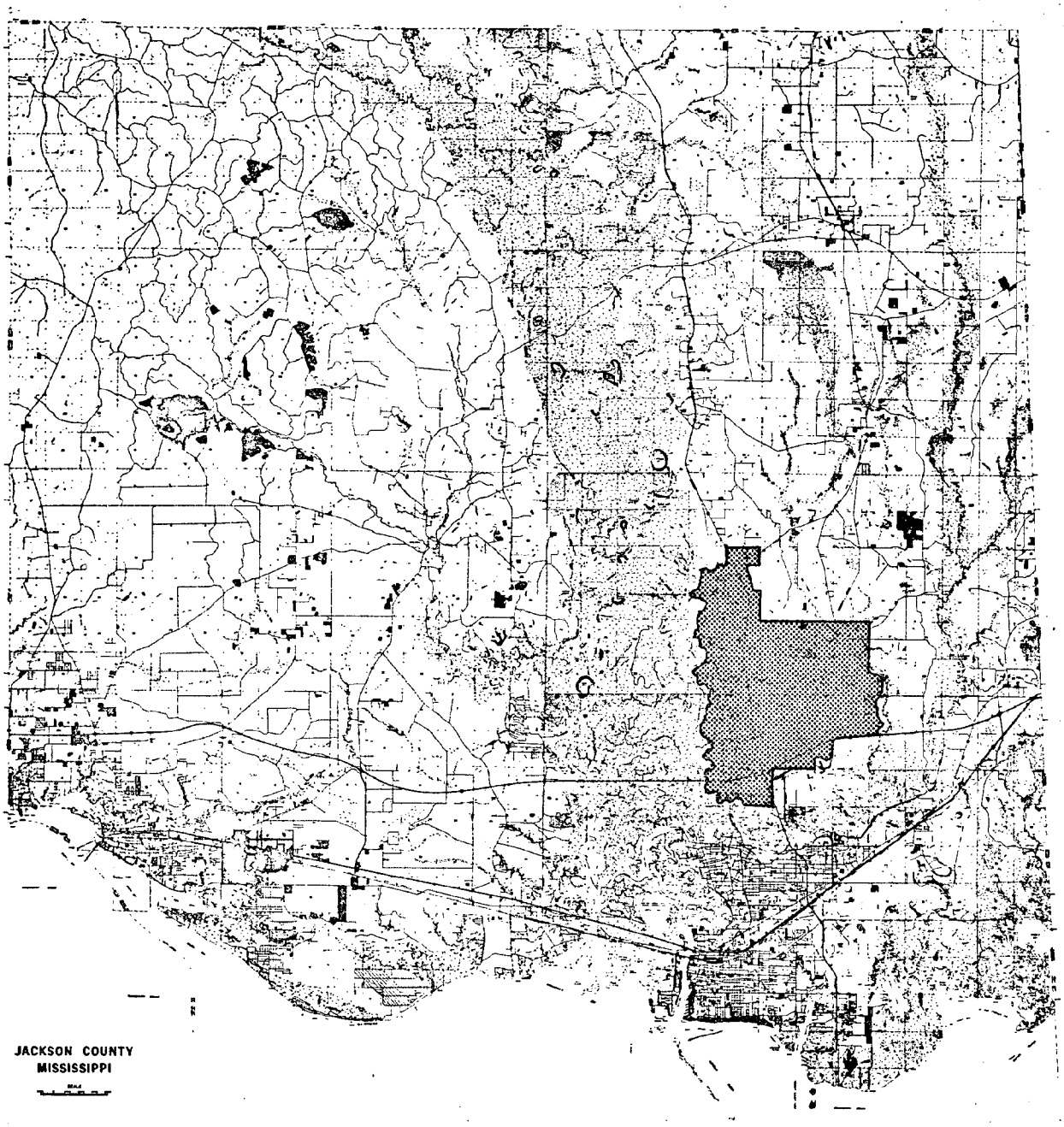
Biological Characteristics: *GAPC A-6 is botanically classified as a southern mixed forest. Scrub pine is dominant except near Davis Marsh where live oaks and magnolias become more common. Wildlife is generally lacking in both diversity and abundance except near Davis Bayou Marsh.*

Impact Type: *2, 3, and 4-b.*

Impact Degree: *2.*

7. ESCATAWPA (See Township Maps T6S-R4W + T6S-R5W, T6S-R6W, T7S-R53, and T7S-R6W).

Geographic Delineation: *South of Mississippi Power Company Industrial Parks, north of Moss Point, east of Pascagoula River, and west of Black Creek, covering all or part of sections 13, 14, 23, 24, 25, 26, 35, and 36 in T6S-R6W; sections 28, 29, 30, 31, 32, 33, and 34 in T6S-R4W + T6S-R5W; sections 3, 4, 5, 6, 7, 8, 9, and 10 in T7S-R5W; and sections 1, 2, 11, 12, 13, and 14 in T7S-R6W. Ownership is private.*



ESCATAWPA

LOCATION MAP

Physical Characteristics: GAPC A-7 is physiographically classified as part of the Coastal Pine Meadows. Topography is generally level with maximum slopes of 5%. Average elevation is 15'. Soils are poorly drained soils of the Bayboro-Coxville-Dunbar association and have a clayey subsoil. Soils are alluvial in origin. The Citronelle dominates subsurface geology. Swamps and marshes fill low areas. Surface waters are brackish in the southern portion and fresh in the northern section. Salt-water encroachment is a danger in shallow aquifers.

Biological Characteristics: GAPC A-7 is botanically classified as a southern mixed forest. Pines dominate inland areas while hardwoods dominate fringe areas along streams and marshes. Wildlife is diverse and abundant, especially near marshes.

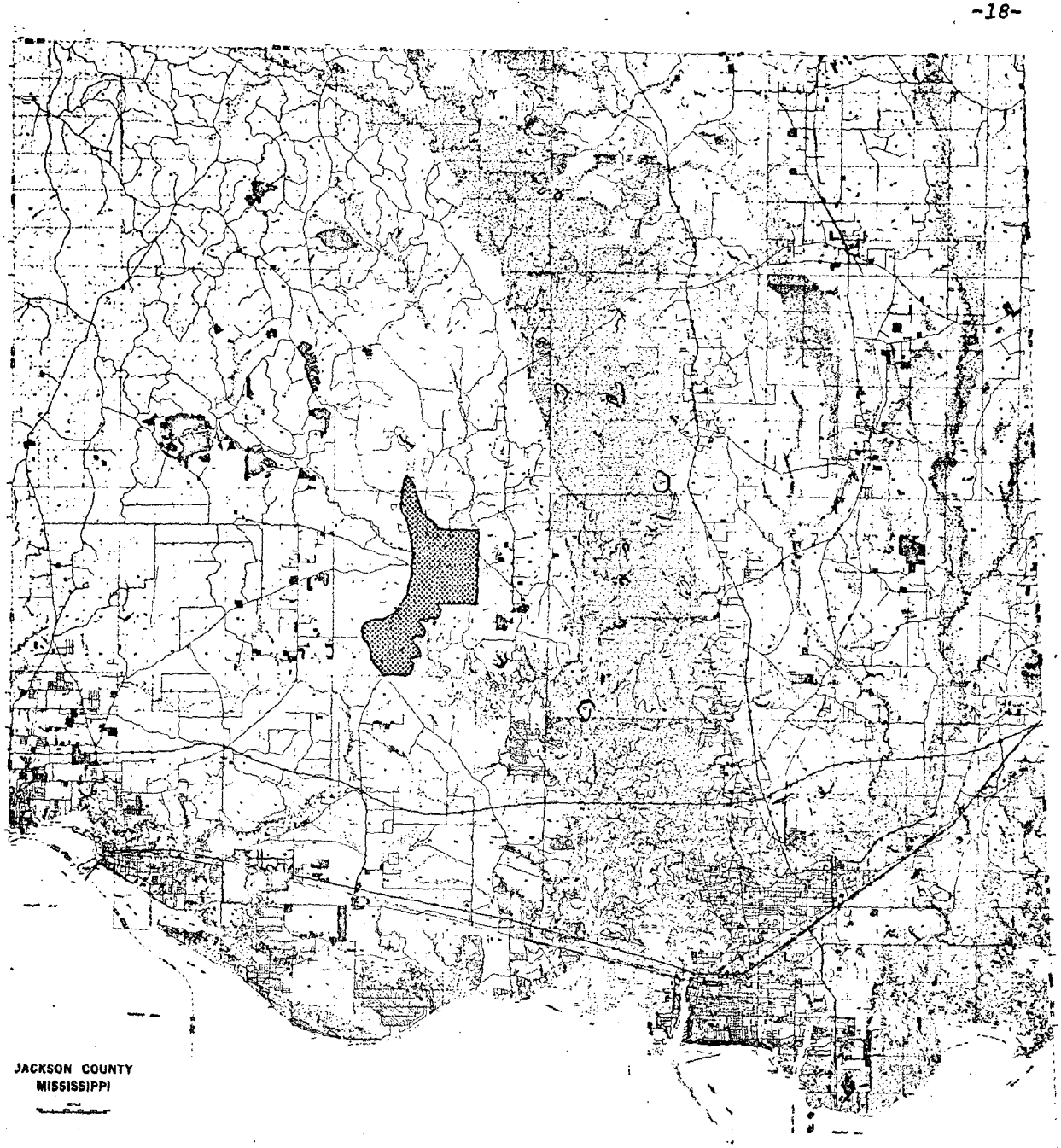
Impact Type: 2, 3, and 4-c.

Impact Degree: 3.

8. VANCLEAVE (See Township Map T6S-R7W).

Geographic Delineation: North of Fontainbleau Unit of the Mississippi Sandhill Crane National Wildlife Refuge following and roughly ½ to one mile on either side of Highway 57, covering all or part of sections 4, 5, 9, 10, 15, 16, 19, 20, 21, 28, 29, and 30 in T6S-R7W. Ownership is private except for 16th section lands.

Physical Characteristics: GAPC A-9 is physiographically classified as part of the Coastal Pine Meadows. Topography is generally rolling with maximum slopes of 12%. Elevation averages 30'. Soils are loamy soils of the Goldsboro-Lynchburg-Norfolk association. Soils are alluvial in



VANCLEAVE

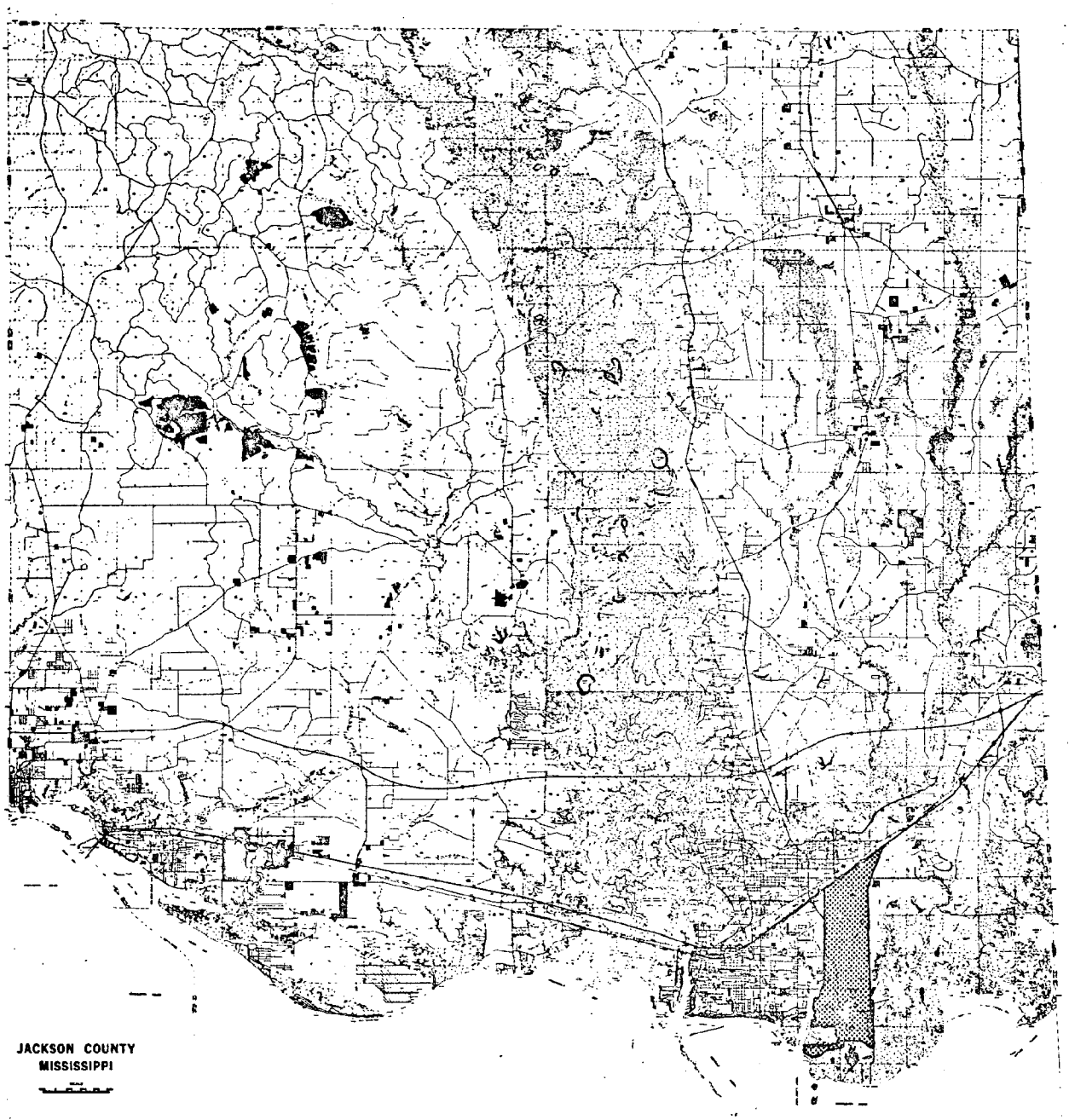
LOCATION MAP

origin. The Graham Ferry formation dominates subsurface geology. Low areas are filled with swamps and sloughs. Surface waters are fresh.

Biological Characteristics: GAPC 9 is botanically classified as a southern mixed forest. Pines dominate upland areas while hardwoods dominate stream bottoms. Wildlife is diverse and abundant. The sandhill crane is sometimes seen in this area.

Impact Type: 2, 3, and 4-a

Impact Degree: 1.



BAYOU CASOTTE

LOCATION MAP

B. *INDUSTRIAL DEVELOPMENTS*

1. BAYOU CASOTTE (See Township Maps T7S-R5W and T8S-R5W).

Geographic Delineation: South of U.S. 90, north and west of Bangs-Cumbest-Heron Tidal Marsh, and east of the City of Pascagoula, covering all or part of sections 27, 28, 32, 33, and 34 in T7S-R5W. Ownership is private except for the Jackson County Airport.

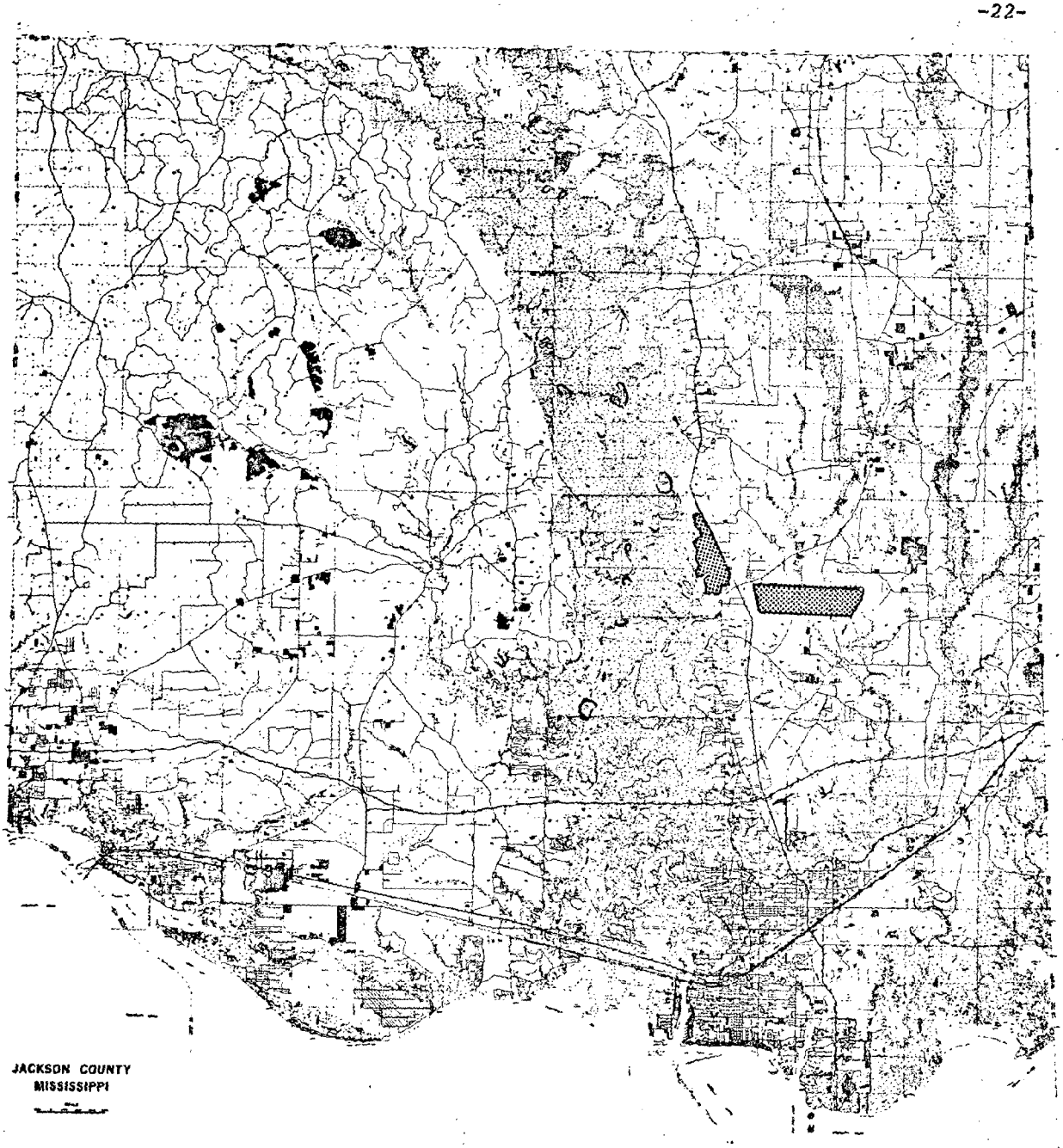
Physical Characteristics: GAPC B-1 is physiographically classified as part of the Coastal Pine Meadows. The southern-most portion of Bayou Casotte is made land. Topography is level with an average elevation of 5'. The northern portion consists of poorly drained loamy soils of the Rains-Lynchburg-Plummer-Goldsboro association while the southern portion consists of muds dredged from Bayou Casotte. The Citronelle dominates subsurface giology. Low areas are usually filled with swamps or marshes. Surface waters are brackish. Salt-water encroachment is a problem in shallow aquifers. Air pollution is a special problem area.

Biological Characteristics: Scrub pines, low shrubs, and grasses are the dominate vegetation. Wildlife is generally lacking because of intensive industrial development.

Impact Type: 1, 2, and 4-c.

Impact Degree: 3.

2. MISSISSIPPI POWER COMPANY GENERATING FACILITY AND INDUSTRIAL PARK, TWO SITES (See Township Maps T6S-R6W and T6S-R6W + T6S-R5W).



MISSISSIPPI POWER COMPANY AND INDUSTRIAL PARK

LOCATION MAP

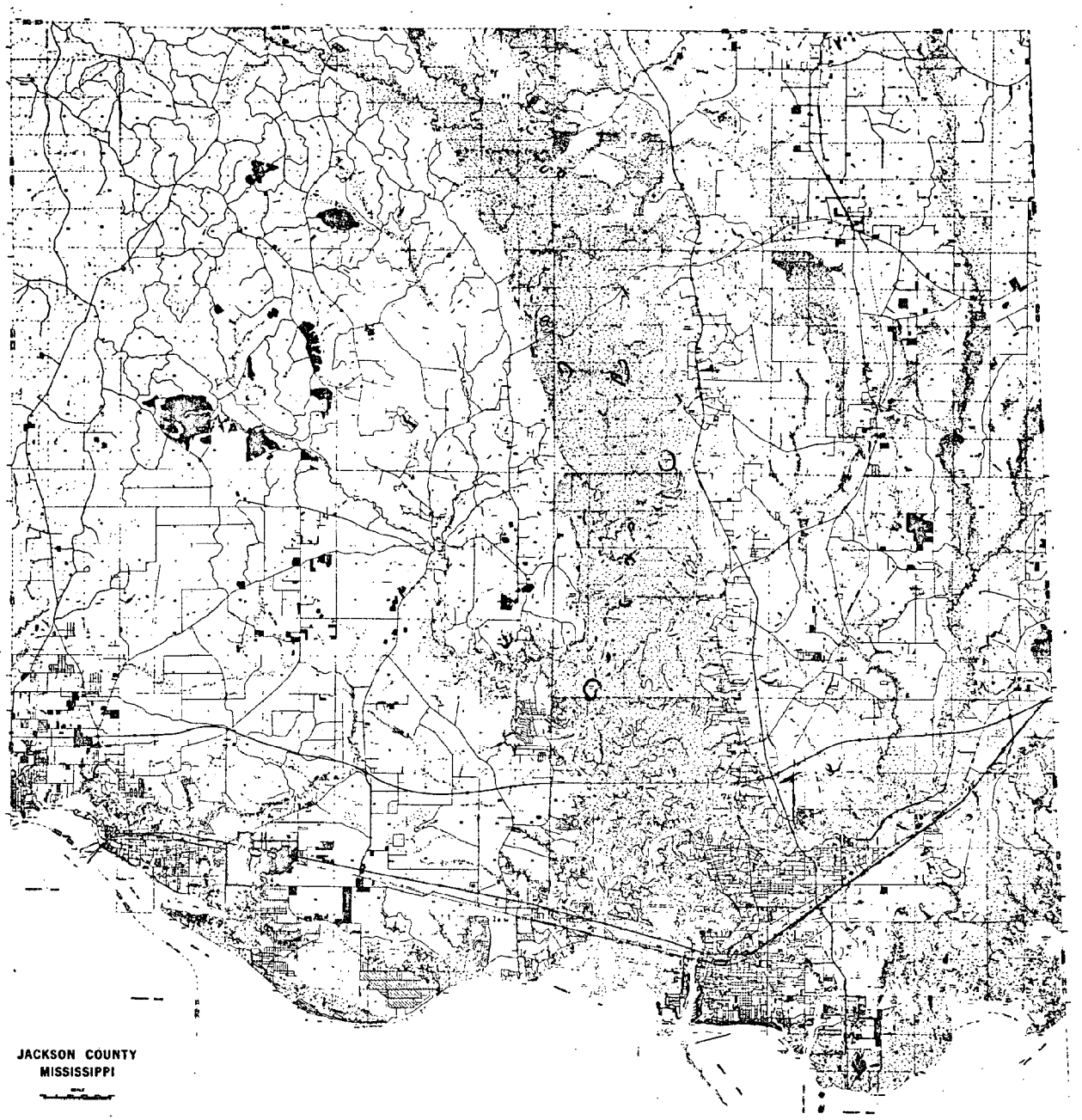
Geographic Delineation: The Mississippi Power Company Generating Facility is located southwest of Highway 63 and west of Pascagoula River, covering all or part of sections 3, 4, 9, 10, 11, 14, and 15 in T6S-R6W. The future Industrial Park is located south of Highway 63, and west of Mississippi Export Railroad, covering all or part of sections 16, 17, 18, 19, 20, and 21 in T6S-R5W and sections 13 and 24 in T6S-R6W. Ownership is private.

Physical Characteristics: GAPC B-2 is physiographically classified as part of the Coastal Pine Meadows. Topography is generally level to near-level. Average elevation is 30' except in the western portion of the Mississippi Power Company Generating Facility Site. Soils of both sites consist of poorly drained clayey soils of the Bayboro-Coxville-Dunbar association. Flooded alluvial soils of the Pascagoula River Floodplain make up the western portion of the generation facility site. The Citronelle dominates subsurface geology. Swamps and sloughs fill low areas. Surface waters are fresh. Air pollution is a special problem area.

Biological Characteristics: GAPC B-2 is botanically classified as a southern mixed forest. Pines dominate upland vegetation while cypress, tupelo, and other wetland species dominate the Pascagoula River Floodplain portion. Wildlife is sparse on upland areas and abundant on lowland areas.

Impact Type: 1, 2, and 4-b.

Impact Degree: 2.



ROUND ISLAND

LOCATION MAP

C. NATURAL AREAS

1. ROUND ISLAND (See MMRC Coastal Beaches Map).

Geographic Delineation: South of Pascagoula Bay, north of Horn Island, located in the Mississippi Sound. Ownership is private.

Physical Characteristics: GAPC C-1 is a natural island. Topography is level to near-level with an average elevation of 3'. Soils are sandy wet soils or loamy sands of the tidal marsh association. Low areas are filled with marshes which are tidal-influenced. Surface waters are mostly salty. Round Island is subject to littoral drift and inundation from severe storms and hurricanes.

Biological Characteristics: GAPC C-1 is dominated by pines. Wildlife is sparse and consists mostly of cottontail rabbits, mice, and birds. Mollusks are common along the beaches.

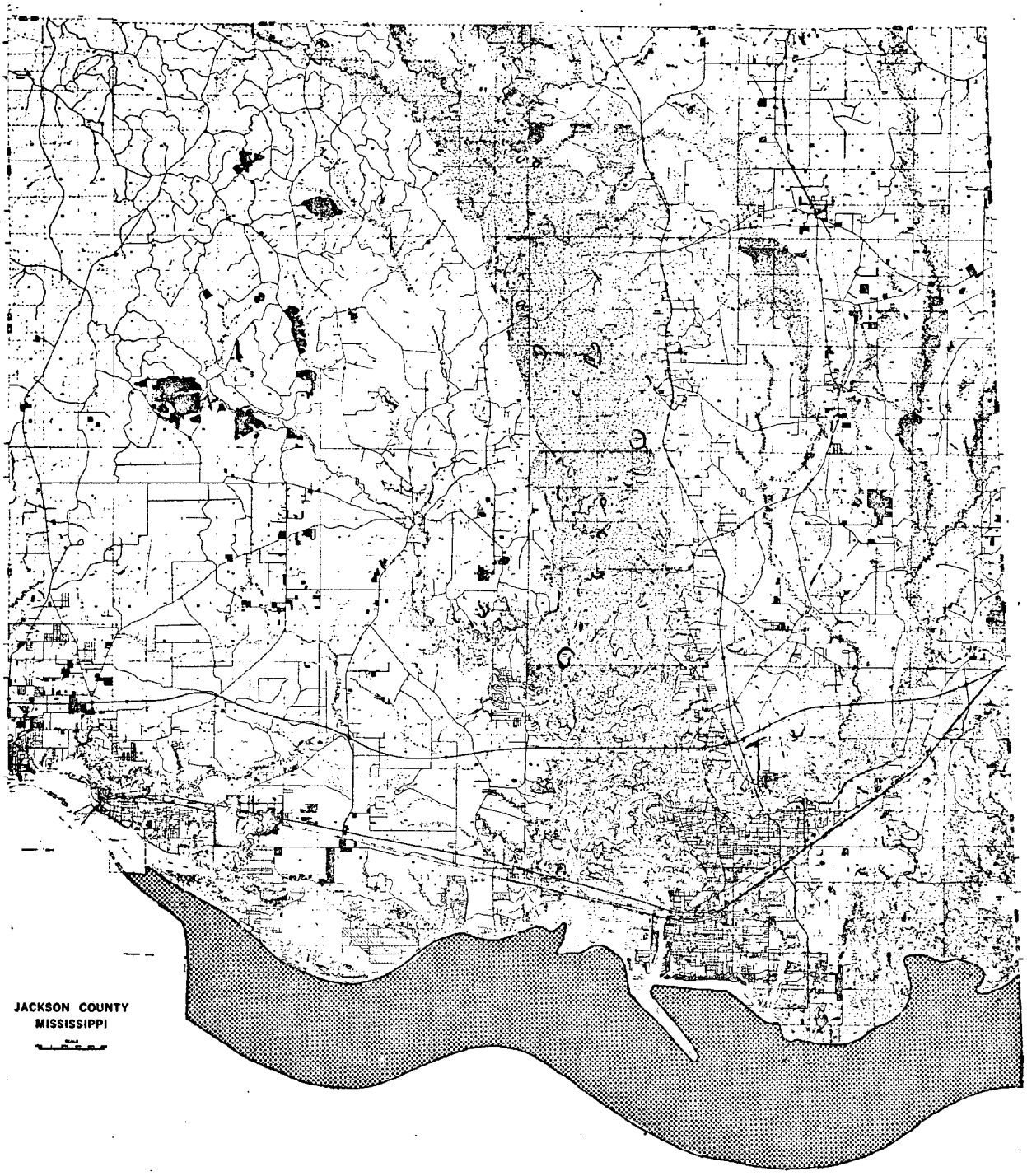
Impact Type: 4-b.

Impact Degree: 2.

2. MISSISSIPPI SOUND (Portions shown on Township Maps T7S-R9W, T7S-R8W, T8S-R8W, T8S-R7W, T8S-R6W, T8S-R5W, and T8S-R4W).

Geographic Delineation: That portion of Mississippi Sound under the political jurisdiction of Jackson County including the water surface and bottom area from the Harrison County line on the west to the Alabama line on the east and extending three nautical miles from shore.

Physical Characteristics: GAPC C-2 is a body of water. Salinity varies from salty in the southern portion to brackish near the coast. All salty water, however, is diluted with fresh water to some extent. The bottom consists of thick sediments, sands, or clays. Depth averages 2 fathoms.



MISSISSIPPI SOUND

LOCATION MAP

Biological Characteristics: GAPC C-2 is part of the Gulf Coast Fertile Cresent, one of the world's most productive fisheries areas. The entire Mississippi Sound is a fisheries nursery, with the waters off the deltaic region from Belle Fontaine Point to the Alabama line being exceptionally productive.

Impact Type: 1, 4-b.

Impact Degree: 2.

3. BEACHES

a. BELLE FONTAINE-GULF PARK-GAUTIER (See MMRC Coastal Beaches Map).

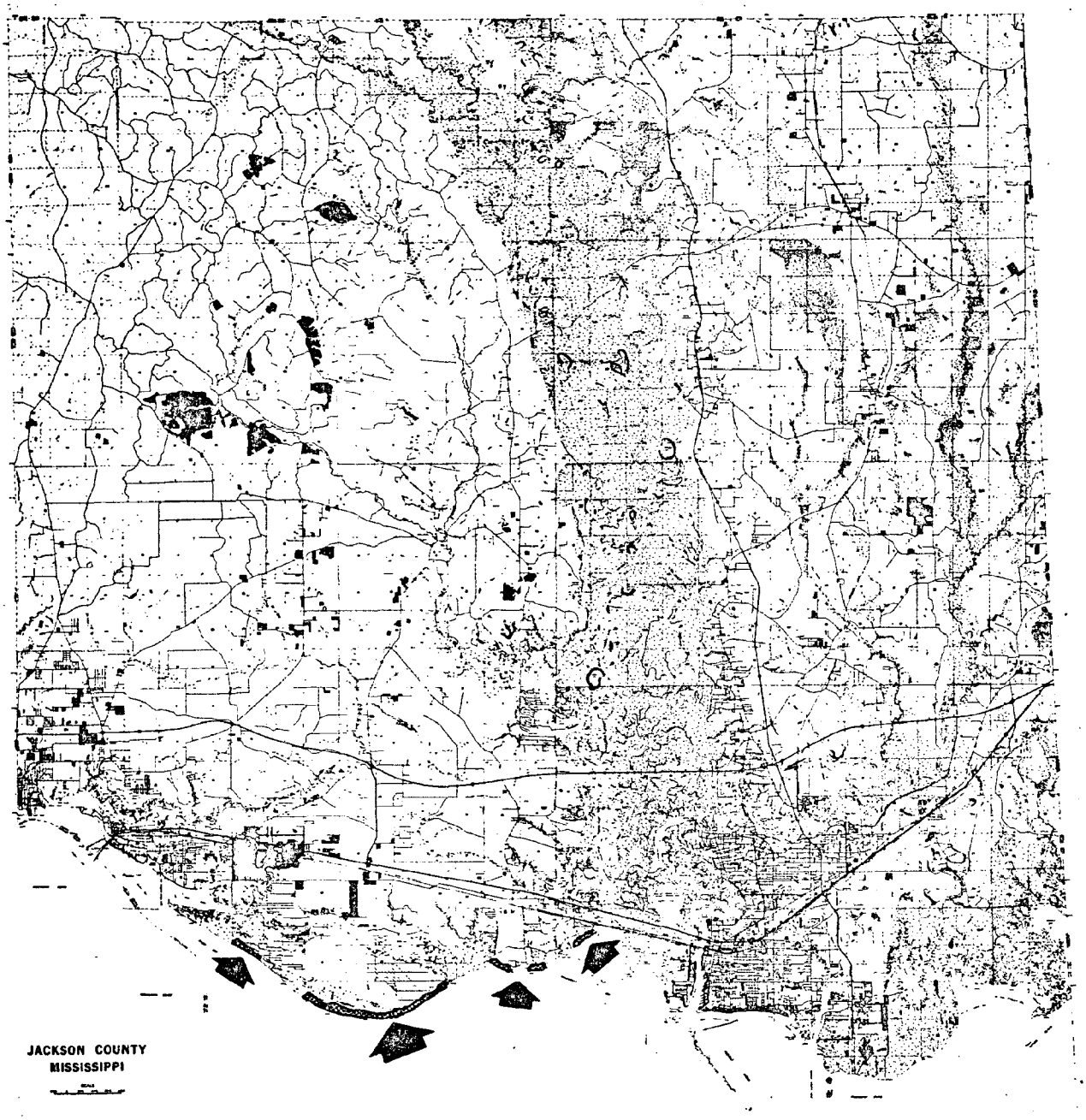
Geographic Delineation: Belle Fontaine Beach is located south of St. Andrews and Belle Fontaine Marsh, bordering on the Mississippi Sound, occupying all or part of section 13 in T8S-R8W and sections 17, 18, and 19 in T8S-R7W. Gulf Park Beach is located south of Davis Bayou Marsh, bordering on the Mississippi Sound, occupying all or part of sections 3, 4, and 10 in T8S-R8W. The Gautier Beaches are located south of Gautier on the Mississippi Sound, occupying all or part of sections 1, 12, 13, 14, and 15 in T8S-R7W and sections 3, 4, and 9 in T8S-R6W. Ownership is private.

Physical Characteristics: GAPC C-3-a are coastal beaches. A few gently rolling dunes are present but topography is mostly level or near-level. Soils are undeveloped. Erosion is a serious problem.

Biological Characteristics: Vegetation is sparse near the water but becomes prolific on the dunes and 50 to 100' from the water. Sea oats, saltgrass, pennywort, goldenrod, prickly pear, and live oaks are the predominant vegetation. Wildlife is sparse except for birds.

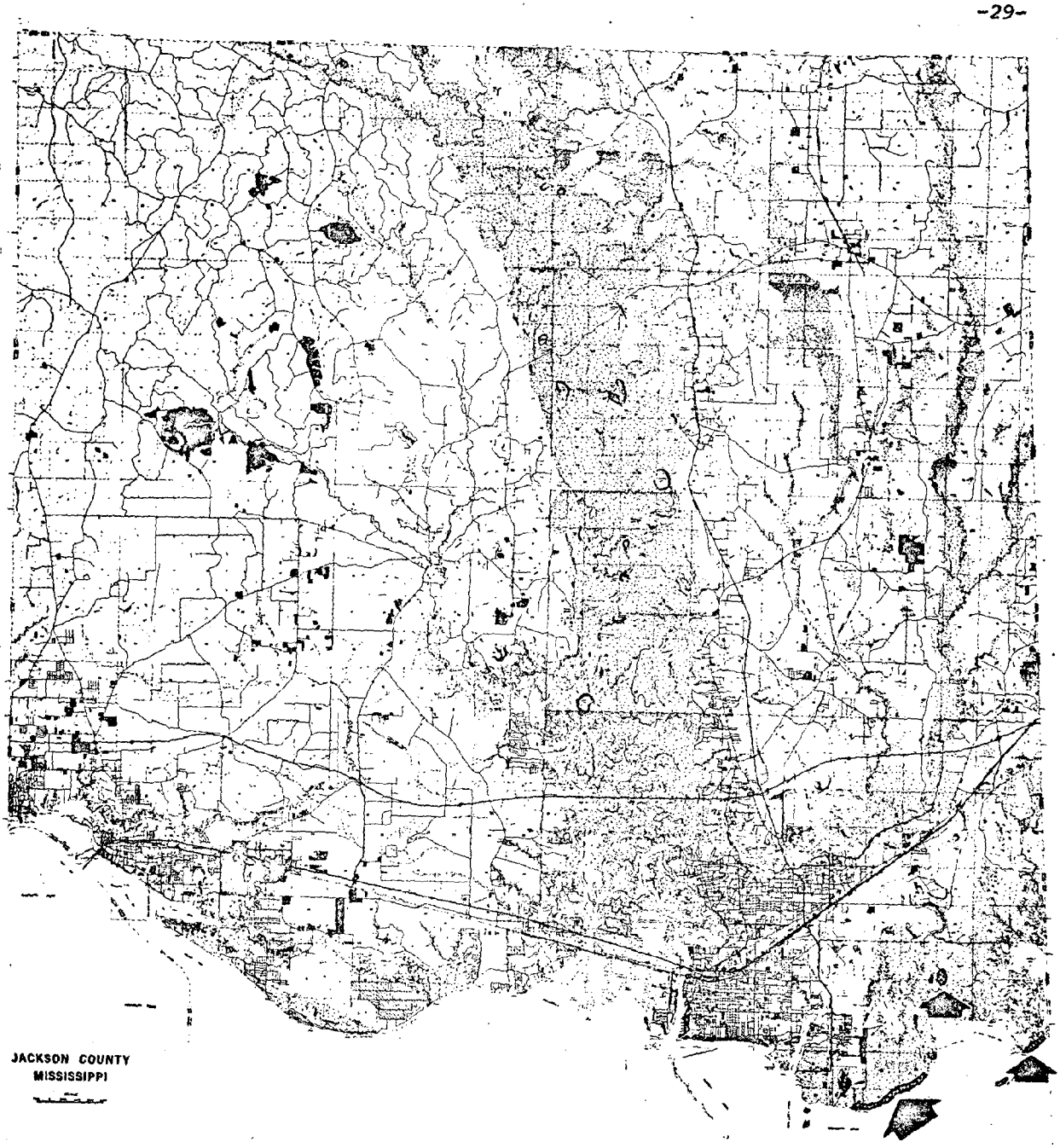
Impact Type: 4-a.

Impact Degree: 1.



BELLE FONTAINE-GULFPARK-GAUTIER BEACHES

LOCATION MAP



POINT AUX CHENES-BAYOU CUMBEST-GRAND BATTURE ISLANDS-SOUTH RIGOLETS ISLAND BEACHES

LOCATION MAP

b. POINT AUX CHENES-BAYOU CUMBEST-GRAND BATTURE ISLANDS-SOUTH RIGOLETS ISLAND (See MMRC Coastal Beach Map).

Geographic Delineation: Point Aux Chenes Beach is located south of Bangs-Cumbest-Heron Tidal Marsh bordering on the Mississippi Sound, occupying all or part of sections 23, 26, 27, and 28 in T8S-R5W. Bayou Cumbest Beaches are located along and on either side of Bayou Cumbest in section 1 of T8S-R5W. Grand Batture Islands Beaches are located south of Point Aux Chenes Bay in the Mississippi Sound. South Rigolets Island Beaches are located south of Middle Bay bordering on the Mississippi Sound, occupying part of section 17 in T8S-R4W. Ownership is public and private.

Physical Characteristics: GAPC C-3-b are coastal beaches with little or no dune development. Soils are undeveloped. Many of the beaches are surrounded by open water on one side and tidal marsh on the other.

Biological Characteristics: Vegetation is sparse and limited to marine species and birds. Many of the beaches are littered with mollusk shells.

Impact Type: 4-a.

Impact Degree: 1.

4. TIDAL MARSHES (See MMRC Tidal Marsh Map).

Geographic Delineation: Tidal marshes are located along the coastal areas of Jackson County, mostly south of I-10 except in the Pascagoula River Tidal Marsh. The tidal marshes are grouped into six major areas:

(1) Fort Bayou and Biloxi Bay Tidal Marshes, occupying all or part of sections 13, 14, 15, 24, and 25 in T7S-R9W and sections 18, 19,

20, 21, 22, and 23 in T7S-R8W;

(2) Davis Bayou Tidal Marshes, occupying all or part of sections 33, 34, and 35 in T7S-R8W and sections 1, 2, 3, 4, and 5 in T8S-R8W;

(3) Belle Fontaine Tidal Marsh, occupying all or part of sections 10, 11, 12, 13, and 14 in T8S-R8W and sections 17 and 18 in T8S-R7W;

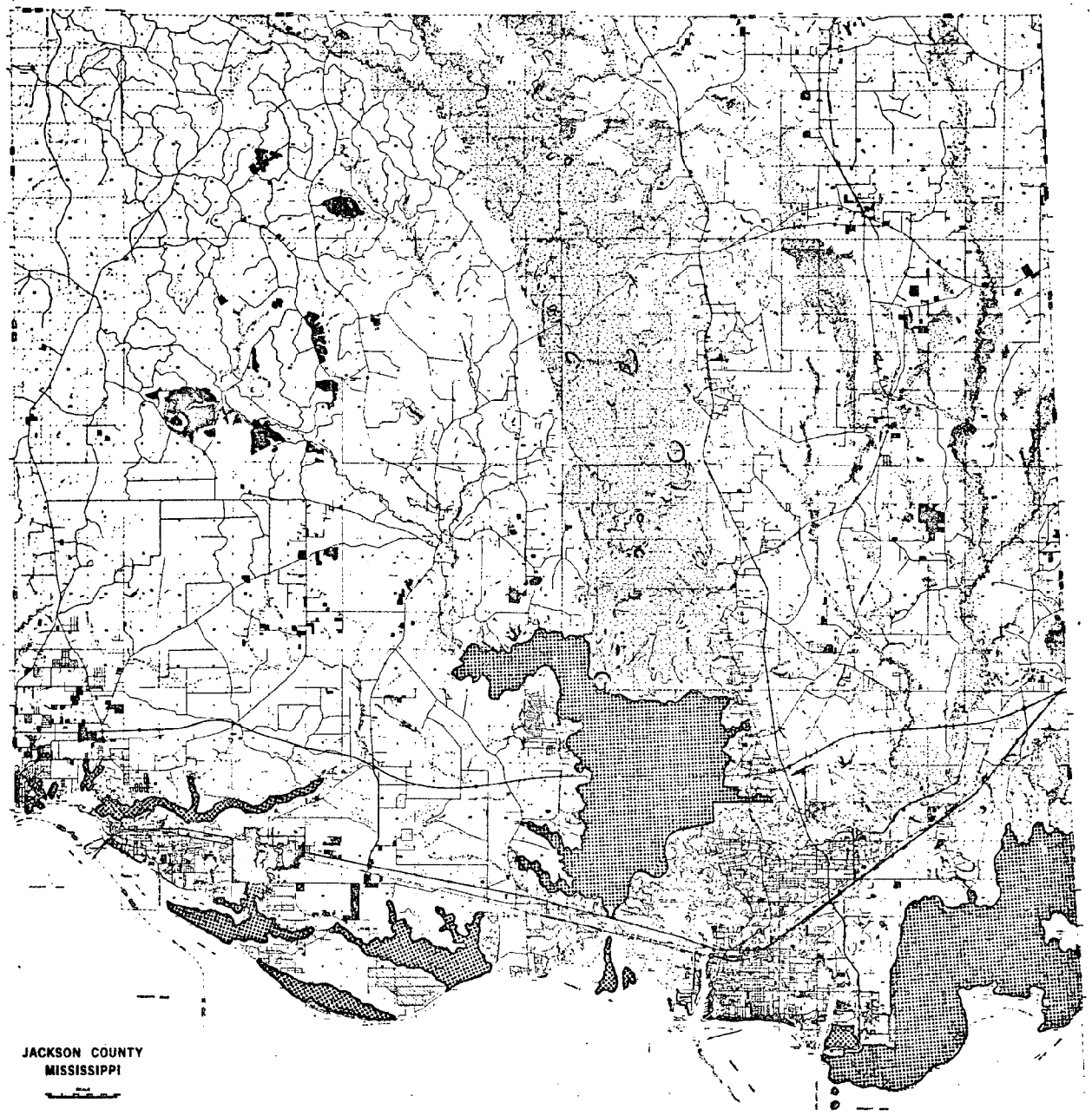
(4) Graveline Tidal Marsh, occupying all or part of sections 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, and 19 in T8S-R7W; sections 33, and 34 in T7S-R7W;

(5) Pascagoula-Escatawpa River Tidal Marshes, occupying all or part of 24, 25, and 36 in T7S-R7W; sections 3, 4, 6, 9, 13, 14, 18, 30, 31, and 32, plus all unsurveyed land and water surface in T7S-R6W; and the islands in the West Pascagoula and Middle Rivers in T8S-R6W; sections 31 and 40 in T6S-R6W; and sections 1, 2, 3, 25, 26, 34, 35, and 36 in T6S-R7W;

(6) Bangs-Cumbest-Heron Tidal Marsh, occupying all or part of sections 1, 2, 3, 10, 11, 12, 14, 15, 17, 20, 21, 22, 23, 27, 28, and 29 in T8S-R5W; sections 25, 34, 35, and 36 in T7S-R5W; sections 5, 6, 7, 8, 17, and 18 in T8S-R4W; and sections 19, 20, 29, 30, 31, and 32 in T7S-R4W. Ownership is public and private.

<u>Physical Characteristics:</u> GAPC C-6 is a tidal marsh with little or no dry land. Tidal marshes are at or below sea level and are tidal-influenced. Brackish surface waters cover mucky organic soils.

<u>Biological Characteristics:</u> Marsh grasses are the dominant vegetation and are cut by numerous watercourses. Marine and



TIDAL MARSHES

LOCATION MAP

marsh species are the dominant wildlife. Tidal marshes are essential nursery areas and habitat for shellfish, fresh and saltwater fish, and waterfowl.

Impact Type: 4-b.

Impact Degree: 2.

5. *COASTAL WETLANDS (See MMRC Coastal Wetlands Map).*

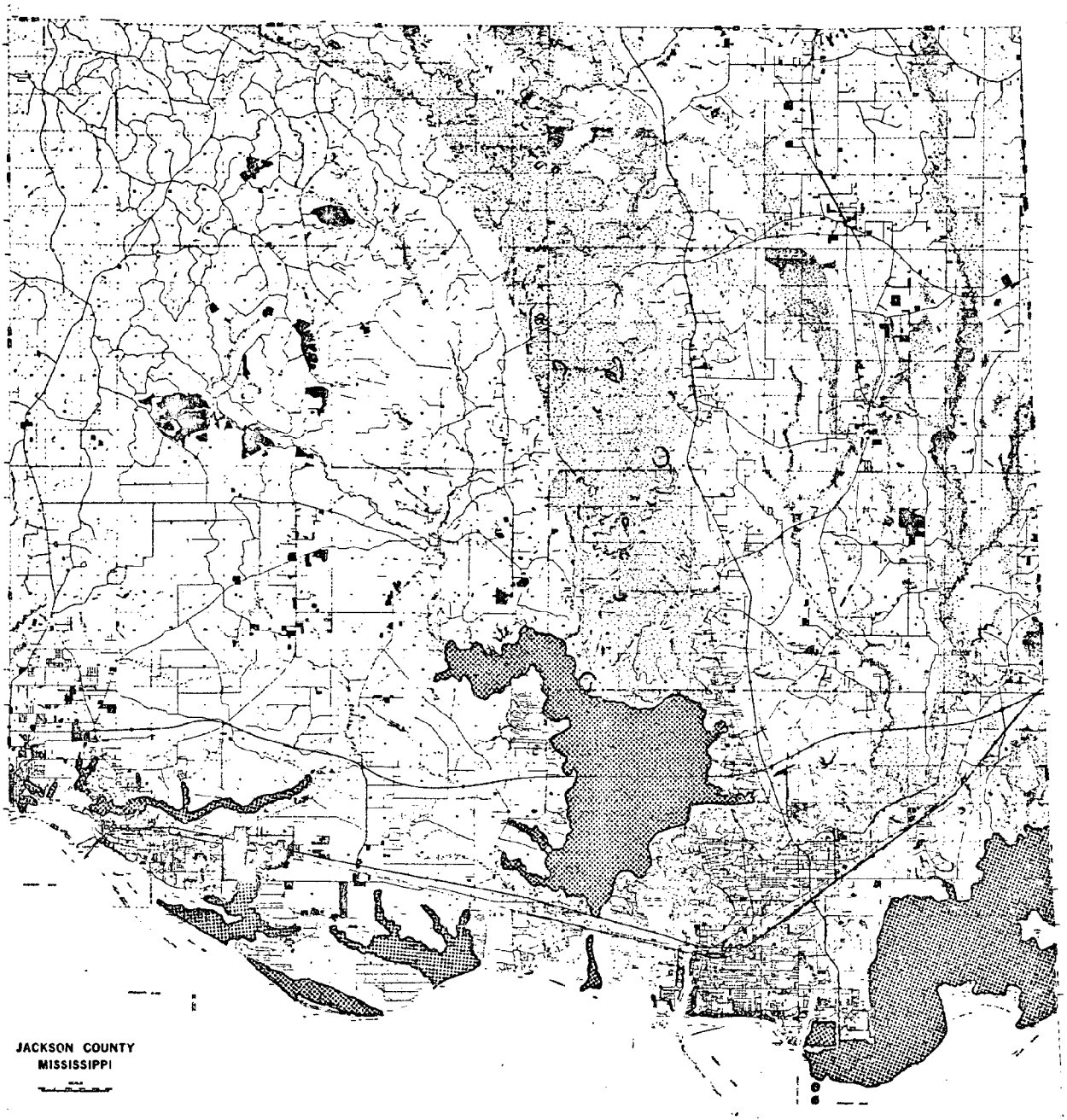
Geographic Delineation: Wetlands are contiguous with tidal marshes and include, in addition, the following sections: 13, 16, 17, and 25 in T7S-R8W; 11, 12, 26, 29, and 32 in T7S-R7W; 1, 11, 12, and 14 in T8S-R7W; 2, 3, 4, and 9 in T8S-R6W; 27, 28, 29, 30, 31, 32, 33, and 34 in T6S-R6W; 2, 11, and 12 in T7S-R6W; 25, 26, 34, and 36 in T6S-R5W; and 1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, and 26 in T7S-R5W. In addition, all Mississippi Sound waters under the jurisdiction of Jackson County are considered part of the coastal wetlands. Ownership is public and private.

Physical Characteristics: GAPC C-7 is coastal wetland. Wetlands include tidal marshes and water-related lands adjacent to water-courses and above the tidal marshes. Emergent land is usually composed of mucky organic soils.

Biological Characteristics: The marsh grasses of the tidal marsh are succeeded by larger plants in the wetlands such as shrubs, tupelo, and cypress. Wildlife is abundant on emergent lands and freshwater fish thrive in the waters of the wetlands.

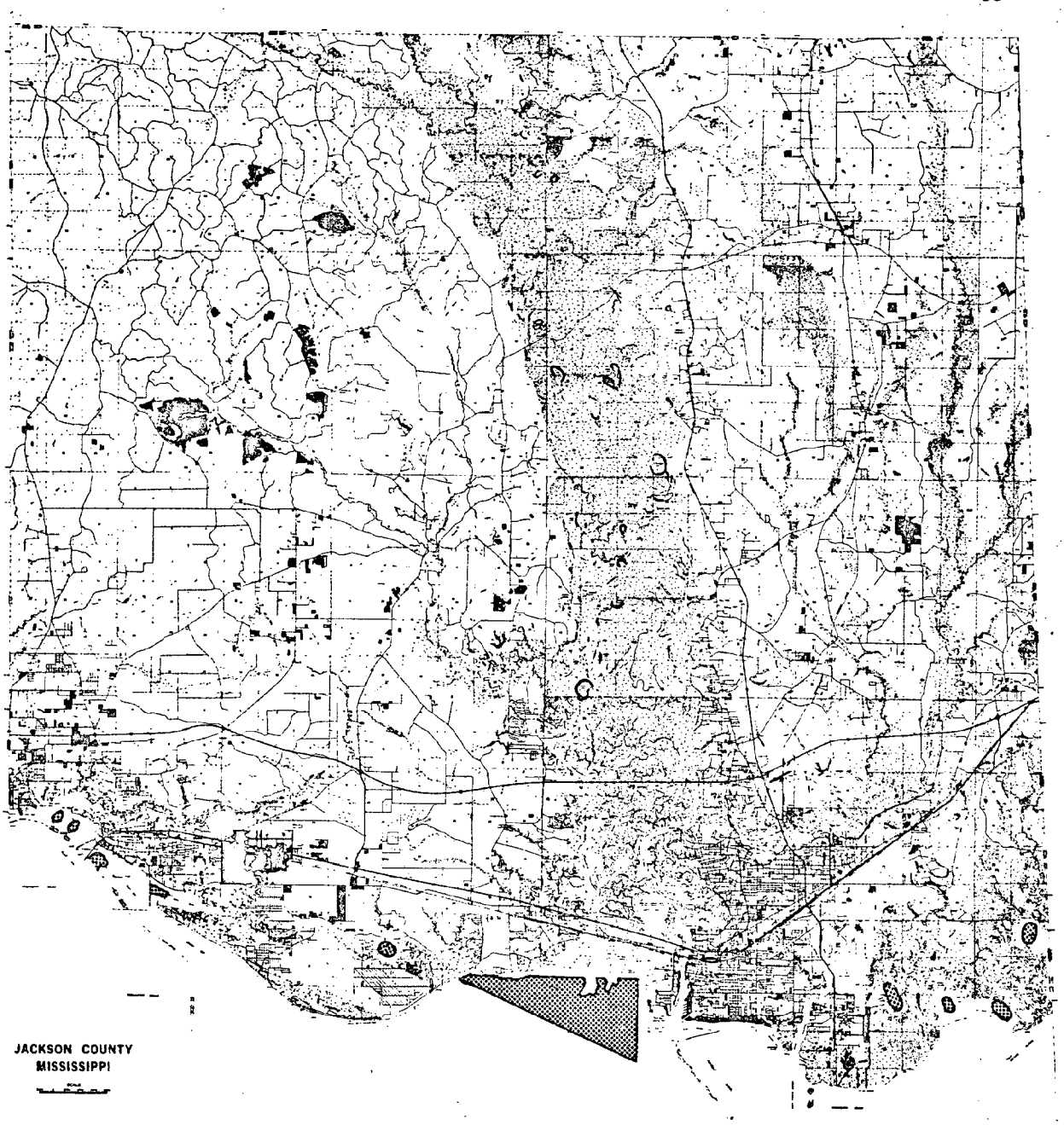
Impact Type: 4-b.

Impact Degree: 2.



COASTAL WETLANDS

LOCATION MAP



OYSTER BEDS AND REEFS

LOCATION MAP

6. *OYSTER BEDS AND REEFS (See MMRC oyster bed map).*

Geographic Delineation: Oyster beds and reefs are located in the lakes, bayous, and offshore. They are divided into three major areas:

(1) Ocean Springs Oyster Beds, located south of Ocean Springs;

(2) Gautier Oyster Beds, located in Graveline Bay, Graveline Bayou, and in a triangular area south of Gautier and the mouths of the West Pascagoula and Middle Rivers; and

(3) Bangs-Cumbest-Heron Oyster Beds, located in Bangs Bay, Bangs Bayou, Jose Bay, and Middle Bay.

Ownership is public.

Physical Characteristics: GAPC C-8 consists of oyster beds and reef. The oyster beds are usually covered by 2 to 6' of brackish or saltwater. The water is usually laden with silt and organic nutrients. Oyster beds are established on relatively firm sand, silt, or sandy silt bottoms.

Biological Characteristics: The oyster beds of Jackson County are highly productive. The Gautier Oyster Beds are the world's most productive because of organic nutrients supplied by the Pascagoula River. Other marine organisms are also common in oyster bed areas.

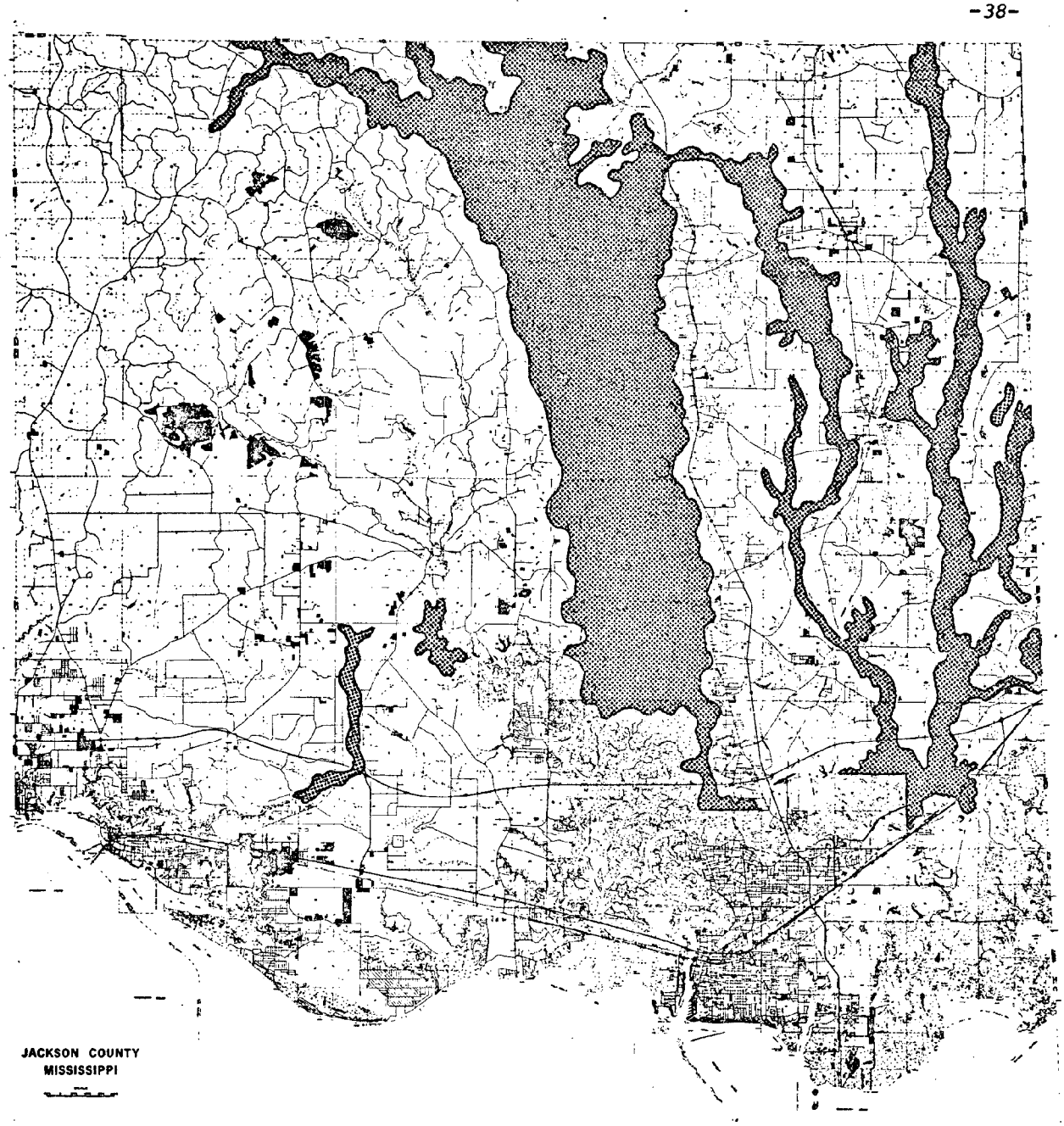
Impact Type: 4-b.

Impact Degree: 2.

7. *FLOODWAYS-PASCAGOULA-ESCATAWPA-OLD FORT BAYOU DRAINAGE SYSTEMS (See Township Maps T4S-R8W, T4S-R7W, T4S-R6W, T4S-R4W + T4S-R5W, T5S-R4W + T5S-R5W, T5S-R6W, T5S-R7W, T6s-R7W, T6S-R6W, T6S-R4W +*

T6S-R5W, T7S-R5W, T7S-R6W, T7S-R7W, and T7S-R8W).

Geographic Delineation: The Pascagoula Floodway includes Red Creek and Black Creek and occupies sections 2, 6, and the unsurveyed areas of T7S-R6W; sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34, 35, 39, 41, 42, and 43 in T6S-R6W; sections 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 37, 38, 40, 41, 42, and 43 in T5S-R6W; sections 5, 7, 8, 16, 17, 18, 20, 21, 22, 28, 29, 30, 31, 32, 33, 34, 37, 38, 39, 40, 41, and 43 in T4S-R6W; sections 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 22, 23, 24, 25, 26, 27, 34, 35, 36, 37, 38, 39, and 40 in T4S-R7W; and sections 1, 2, 11, 12, 13, 17, 24, 37, 38, and 39 in T5S-R7W. The Escatawpa floodway includes Franklin Creek, Big Creek, Black Creek, and significant swamps and sloughs in or near these floodways, and occupies sections 1, 2, 3, 8, 9, 10, 11, 12, 13, 14, 15, and 22, in T7S-R5W; sections 1, 2, 5, 6, 7, 8, 11, 12, 13, 14, 17, 18, 21, 23, 24, 25, 26, 27, 28, 19, 20, 22, 33, 34, 35, and 36 in T6S-R5W; sections 1, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, and 36 in T5S-R5W; sections 2, 3, 11, 13, 14, 23, 24, 25, 26, 35, 36, and 37 in T4S-R5W; sections 15, 22, 23, 24, 25, and 36 in T4S-R6W; section 30 in T4S-R4W; sections 6, 7, 19, 29, 30, 31, and 32 in T5S-R4W; and sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31, and 32 in T6S-R4W. Ownership is private and public. The Mississippi Game and Fish Commission is buying sections of the Pascagoula floodway for a game management area.



FLOODWAYS

LOCATION MAP

Physical Characteristics: *The floodways of the Pascagoula-Escatawpa Drainage Systems are characterized by dense broadleaf forests and water-tolerant vegetation. Topography is level to near level with scattered islands and hummocks rising a few feet above the floodway bottom. Elevation varies from a high near 40' in the north to a low near sea level in the south. Soils are water-saturated alluviums. Surface waters are fresh. These floodways are important as aquifers and in reducing the severity of floods.*

Biological Characteristics: *GAPC C-9 is dominated by hardwood and water-tolerant trees. Wildlife is diverse and abundant.*

Impact Type: *4-b.*

Impact Degree: *2.*

8. SEAGRASS AREAS (See MMRC seagrass areas map).

Geographic Delineation: *Seagrass areas are divided into four major areas;*

(1) South of Davis Bayou Tidal Marsh in Biloxi Bay;

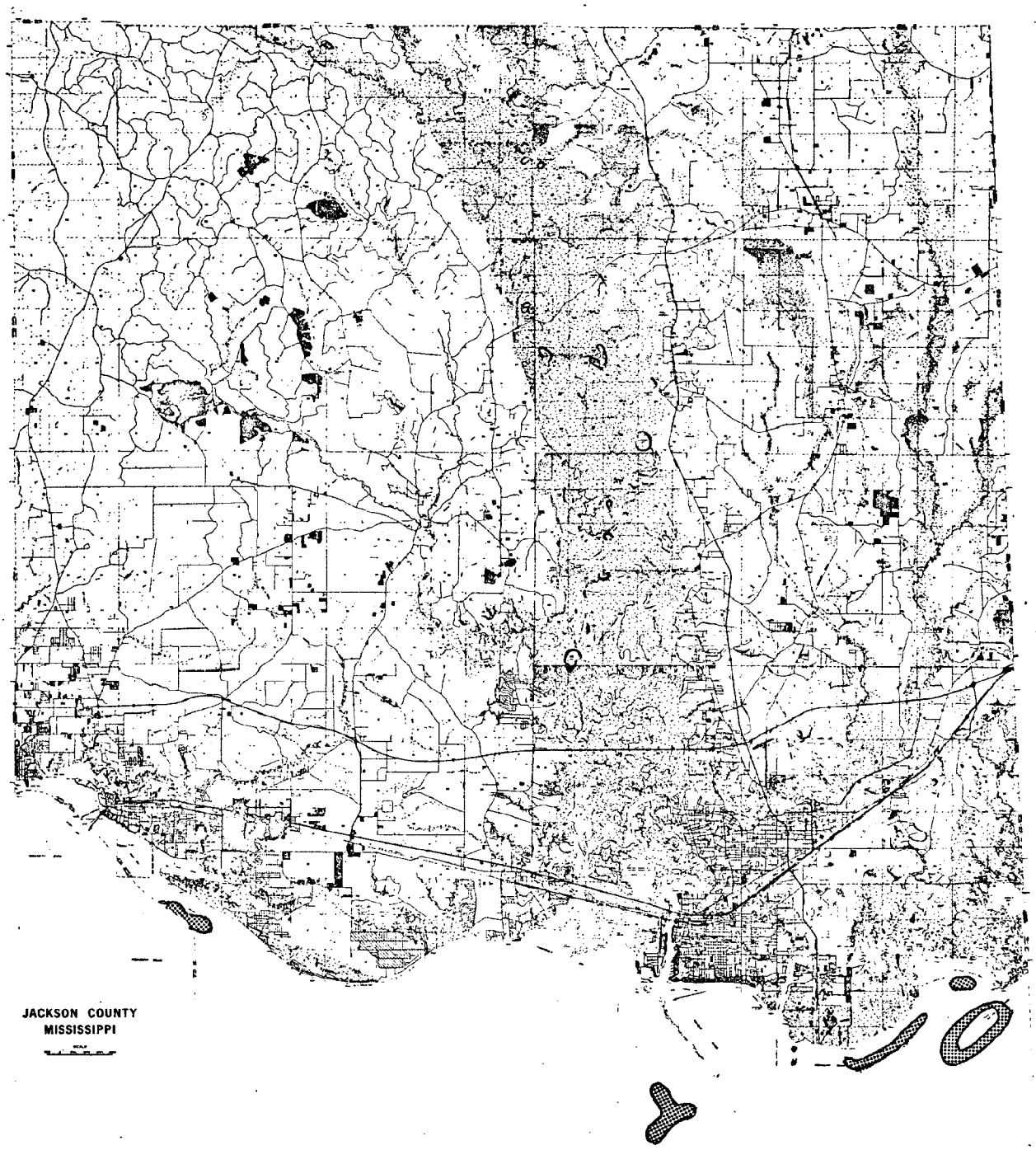
(2) East of Point Aux Chenes in the Mississippi Sound and Point Aux Chenes Bay;

(3) South of Bangs-Cumbest-Heron Tidal Marsh between Bangs Bayou and Jose Bay; and

(4) South of Point Aux Chenes Bay surrounding the Grand Batture Islands.

Ownership is public.

Physical Characteristics: *GAPC C-8 are seagrass areas. These areas are usually found under 2 to 8' of salty to brackish water. The bottom is usually level and is composed of sediments.*



SEAGRASS AREAS

LOCATION MAP

Biological Characteristics: *GAPC C-10 are productive fisheries nurseries. Immature marine organisms seek safety and shelter in the seagrass. Shoal grass, mantee grass, turtle grass, and widgeon grass dominate the seagrass areas.*

Impact Type: 4-b.

Impact Degree: 2.

D. *HISTORICAL-ARCHAEOLOGICAL SITES (See MMRC Historical-Archaeological Sites Map).*

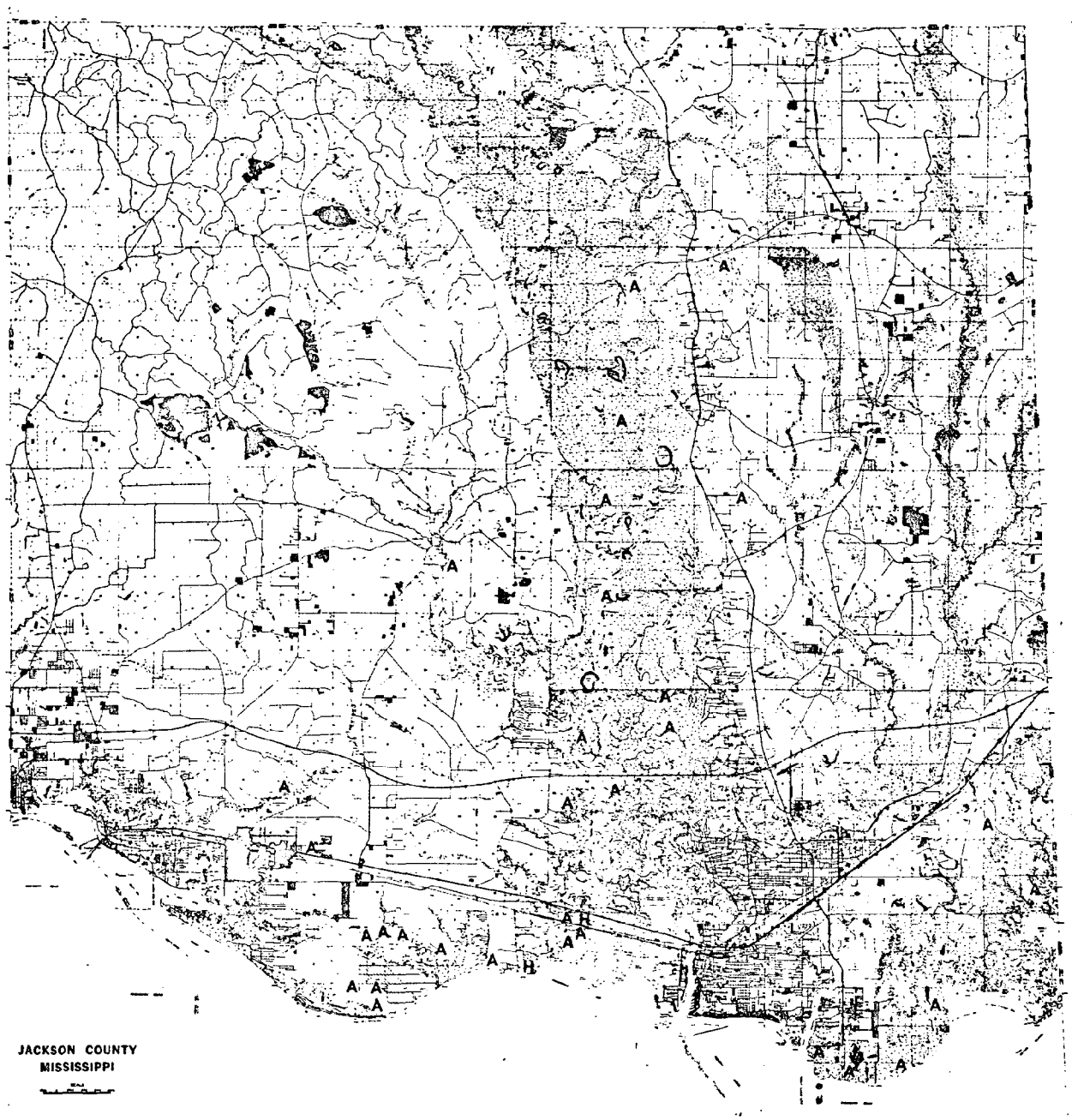
Geographic Delineation: Archaeological sites, mostly Indian mounds and middens, are located throughout Jackson County. The approximate locations of these sites are within sections 2, 28, and 31 in T5S-R6W; sections 1, 2, 20, 23, 34, and 43 in T6S-R6W; section 30 and three separate sites in the unsurveyed part of T7S-R6W; sections 19 and 32 in T&S-R4W; sections 14, 26, and 28 in T8S-R5W; sections 13 and 25 in T7S-R8W; and sections 4, 5 (2 sites), 6, 14, 16, 17 (2 sites), and 18 in T8S-R7W. Historical sites consist of Old Place Plantation in section 2 of T8S-R6W and Old Fields Plantation in section 12 of T8S-R7W. Ownership is public and private.

Physical Characteristics: The archaeological sites consist of mounds or earth or shell middens constructed by Indians in historic and prehistoric times. The historic sites are plantations dating from the 19th century and consist of a historic house and manicured lawns and grounds.

Biological Characteristics: Most of the archaeological sites are remote and are covered with vegetation. The two historic sites are renowned for their magnificent live oaks and magnolias.

Impact Type: 3 and 4-a.

Impact Degree: 1.



H A
HISTORICAL SITES----ARCHAEOLOGICAL SITES

LOCATION MAP

E. *GULF ISLANDS NARIONAL SEASHORE: MISSISSIPPI DISTRICT OFFICE AND PARK (See MMRC Federal Ownership Map).*

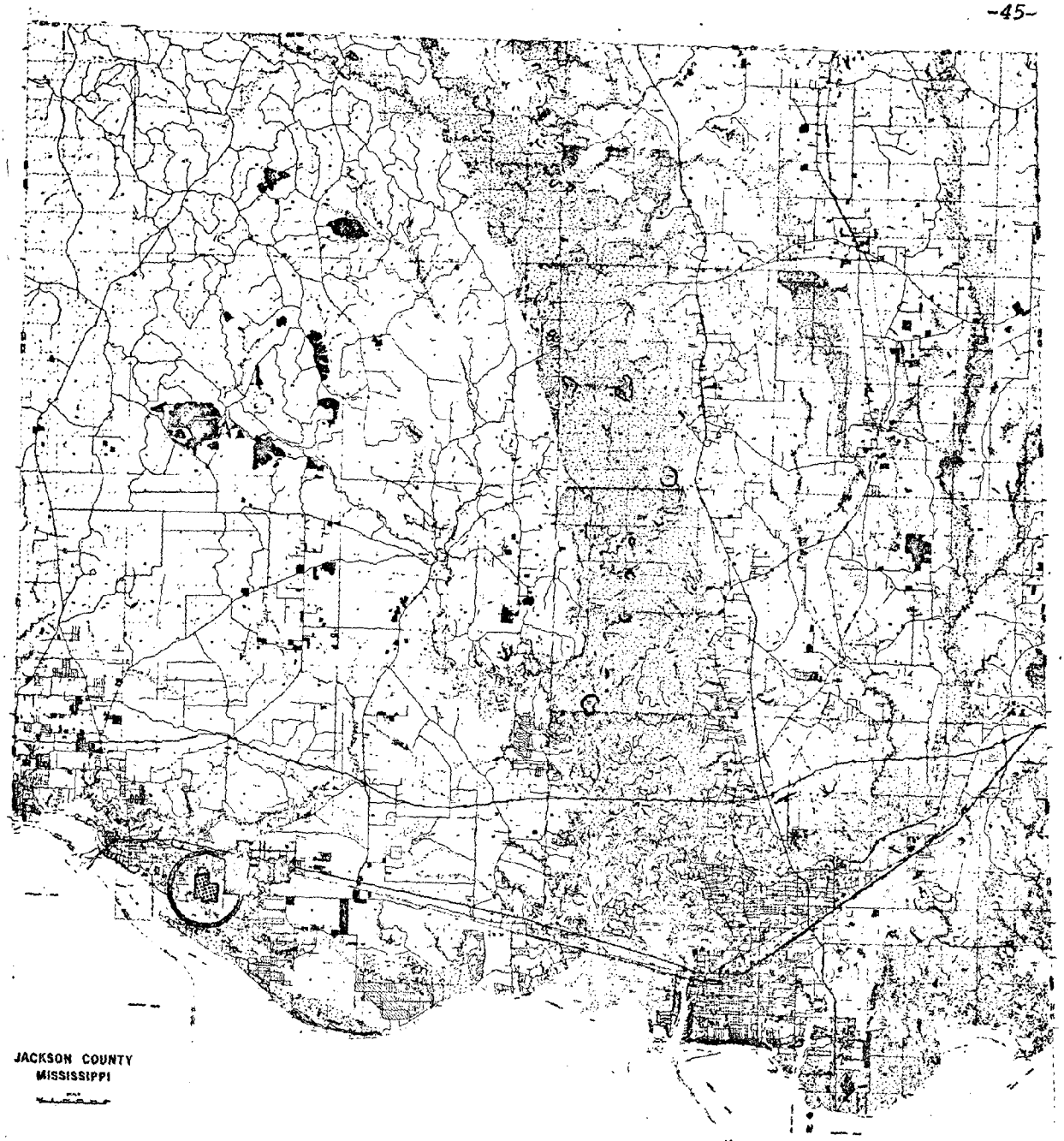
Geographic Delineation: South of Ocean Springs on Davis and Stark Bayous, occupying all or part of sections 28 and 33 in T7S-R8W. Ownership is public.

Physical Characteristics: GAPC E is physiogfaphically classified as part of the Coastal Pine Meadows. Topography is level or near level and average elevation is 6'. Soils are poorly drained loamy soils of the Rains-Lynchburg-Plummer-Goldsboro association. Subsurface geology is dominated by the Citronelle. Surface waters are brackish.

Biological Characteristics: GAPC E is botanically classified as a southern mixed forest. This area is noted for its magnificent live oaks, magnolias, and cypress. Wildlife is abundant in or near marsh areas of GAPC E.

Impact Type: 4-a.

Impact Degree: 1.



GULF ISLANDS NATIONAL SEASHORE

LOCATION MAP

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